

BIBLIOGRAPHY  
OF  
INDIAN GEOLOGY, PART II

INDEX OF LOCALITIES

Compiled by T. H. D. LaTouche, M.A., F.G.S.  
Fellow of the Asiatic Society of Bengal.

---

Published by order of the Government of India.

---

CALCUTTA :  
SOLD AT THE OFFICE OF THE GEOLOGICAL SURVEY OF INDIA,  
27, CHOWRINGHEE ROAD.

---

1921

*Price One Rupee.*

# BIBLIOGRAPHY

## OF

## INDIAN GEOLOGY, PART II

### INDEX OF LOCALITIES

#### LIST OF DISTRICTS AND STATES.

	PAGE.
Abor Hills <i>see</i> Assam . . . . .	3
Adilabad <i>see</i> Hyderabad . . . . .	79
Agra <i>see</i> United Provinces . . . . .	137
Ahmadabad <i>see</i> Bombay . . . . .	31
Ahmadnagar <i>see</i> Bombay . . . . .	31
Ajmer-Merwara <i>see</i> Rajputana . . . . .	129
Aka Hills <i>see</i> Assam . . . . .	3
Akola <i>see</i> Central Provinces . . . . .	65
Akyab <i>see</i> Burma . . . . .	43
Aligarh <i>see</i> United Provinces . . . . .	137
Allahabad <i>see</i> United Provinces . . . . .	137
Almora <i>see</i> United Provinces . . . . .	137
Alwar State <i>see</i> Rajputana . . . . .	130
Ambala <i>see</i> Punjab . . . . .	121
Amherst <i>see</i> Burma . . . . .	43
Amraoti <i>see</i> Central Provinces . . . . .	65
Anantapur <i>see</i> Madras . . . . .	84

	PAGE.
Angul <i>see</i> Bihar and Orissa . . . . .	15
Arcot <i>see</i> Madras . . . . .	85
Athmalik State <i>see</i> Bihar and Orissa . . . . .	15
Atraf-i-Balda <i>see</i> Hyderabad . . . . .	79
Attock <i>see</i> Punjab . . . . .	121
Bajaur <i>see</i> N.-W. Frontier Province . . . . .	118
Balaghat <i>see</i> Central Provinces. . . . .	65
Balasore <i>see</i> Bihar and Orissa . . . . .	15
Baltistan <i>see</i> Kashmir . . . . .	82
Banda <i>see</i> United Provinces . . . . .	139
Bangalore <i>see</i> Mysore . . . . .	108
Bankura <i>see</i> Bengal . . . . .	12
Bannu <i>see</i> N.-W. Frontier Province . . . . .	118
Banswara State <i>see</i> Rajputana . . . . .	131
Baroda State <i>see</i> Bombay . . . . .	31
Baroda State <i>see</i> Bombay—Kathiawar . . . . .	35
Bashahr State <i>see</i> Punjab—Simla Hill States . . . . .	128
Bassein <i>see</i> Burma . . . . .	43
Bastar State <i>see</i> Central Provinces . . . . .	67
Bawlake State <i>see</i> Burma—Karenni . . . . .	46
Belgaum <i>see</i> Bombay . . . . .	32
Bellary <i>see</i> Madras . . . . .	86
Benares <i>see</i> United Provinces . . . . .	139
Betul <i>see</i> Central Provinces . . . . .	67
Bhagalpur <i>see</i> Bihar and Orissa . . . . .	15
Bhajji State <i>see</i> Punjab—Simla Hill States . . . . .	120
Bhamo <i>see</i> Burma . . . . .	44
Bhandara <i>see</i> Central Provinces . . . . .	68

	PAGE.
Bharatpur State <i>see</i> Rajputana . . . . .	131
Bhavnagar State <i>see</i> Bombay—Kathiawar . . . . .	36
Bhopal State <i>see</i> Central India . . . . .	60
Bidar <i>see</i> Hyderabad . . . . .	80
Bijapur <i>see</i> Bombay . . . . .	32
Bijawar State <i>see</i> Central India . . . . .	60
Bikaner State <i>see</i> Rajputana . . . . .	131
Bilaspur District <i>see</i> Central Provinces . . . . .	68
Bilaspur State <i>see</i> Punjab—Simla Hill States . . . . .	129
Birbhum <i>see</i> Bengal . . . . .	12
Bolan Pass <i>see</i> Baluchistan . . . . .	10
Bonai State <i>see</i> Bihar and Orissa . . . . .	16
Bor Kamti <i>see</i> Assam . . . . .	4
Broach <i>see</i> Bombay . . . . .	33
Buldana <i>see</i> Central Provinces . . . . .	69
Bundi State <i>see</i> Rajputana . . . . .	132
Burdwan <i>see</i> Bengal . . . . .	13
Cachar <i>see</i> Assam . . . . .	4
Chanda <i>see</i> Central Provinces . . . . .	69
Charkari State <i>see</i> Central India . . . . .	60
Chhindwara <i>see</i> Central Provinces . . . . .	70
Chindwin <i>see</i> Burma . . . . .	44
Chingleput <i>see</i> Madras . . . . .	87
Chitaldroog <i>see</i> Mysore . . . . .	109
Chitral <i>see</i> N.-W. Frontier Province . . . . .	118
Chittagong <i>see</i> Bengal . . . . .	13
Chobpur State <i>see</i> Central India . . . . .	60
Chota Udaipur <i>see</i> Bombay . . . . .	33



	PAGE.
Coimbatore <i>see</i> Madras . . . . .	88
Coorg <i>see</i> Madras . . . . .	89
Cuddapah <i>see</i> Madras . . . . .	89
Cutch <i>see</i> Bombay . . . . .	33
Cuttack <i>see</i> Bihar and Orissa . . . . .	16
Damoh <i>see</i> Central Provinces . . . . .	71
Daphla Hills <i>see</i> Assam . . . . .	4
Dargoti State <i>see</i> Punjab—Simla Hill States . . . . .	129
Darjeeling <i>see</i> Bengal . . . . .	13
Darrang <i>see</i> Assam . . . . .	4
Datia State <i>see</i> Central India . . . . .	60
Dehra Dun <i>see</i> United Provinces . . . . .	139
Delhi <i>see</i> Punjab . . . . .	121
Dera Ghazi Khan <i>see</i> Punjab . . . . .	121
Dera Ismail Khan <i>see</i> N.-W. Frontier Province . . . . .	118
Dhalbhum <i>see</i> Bihar and Orissa—Singhbhum . . . . .	29
Dhar State <i>see</i> Central India . . . . .	60
Dharwar <i>see</i> Bombay . . . . .	34
Dholpur State <i>see</i> Rajputana . . . . .	132
Dhrangadra State <i>see</i> Bombay—Kathiawar . . . . .	36
Dras <i>see</i> Kashmir . . . . .	83
Drug <i>see</i> Central Provinces . . . . .	71
Dungarpur State <i>see</i> Rajputana . . . . .	132
Farrukhabad <i>see</i> United Provinces . . . . .	140
Gangpur State <i>see</i> Bihar and Orissa . . . . .	16
Ganjam <i>see</i> Madras . . . . .	90
Garhwal <i>see</i> United Provinces . . . . .	140
Garo Hills <i>see</i> Assam . . . . .	4

	PAGE.
Gaya <i>see</i> Bihar and Orissa . . . . .	17
Ghazipur <i>see</i> United Provinces . . . . .	141
Godavari <i>see</i> Madras . . . . .	90
Gondal State <i>see</i> Bombay—Kathiawar . . . . .	36
Gulburga <i>see</i> Hyderabad . . . . .	80
Guntur <i>see</i> Madras . . . . .	91
Gurgaon <i>see</i> Punjab . . . . .	122
Gwalior State <i>see</i> Central India . . . . .	60
Hamirpur <i>see</i> United Provinces . . . . .	141
Hassan <i>see</i> Mysore . . . . .	110
Hazara <i>see</i> N.-W. Frontier Province . . . . .	119
Hazaribagh <i>see</i> Bihar and Orissa . . . . .	17
Henzada <i>see</i> Burma . . . . .	45
Hoshangabad <i>see</i> Central Provinces . . . . .	72
Hoshiarpur <i>see</i> Punjab . . . . .	122
Hsamonghkam (Thamakan) State <i>see</i> Burma—S. Shan States— Myelat . . . . .	55
Hsipaw State <i>see</i> Burma —N. Shan States . . . . .	54
Hsikip (Thigyit) State <i>see</i> Burma —S. Shan States—Yawnghwe . . . . .	56
Idar State <i>see</i> Bombay . . . . .	35
Indore State <i>see</i> Central India . . . . .	61
Insein <i>see</i> Burma . . . . .	46
Jaipur State <i>see</i> Rajputana . . . . .	132
Jaisalmer State <i>see</i> Rajputana . . . . .	134
Jalaun <i>see</i> United Provinces . . . . .	141
Jalpaiguri <i>see</i> Bengal . . . . .	14
Jammu <i>see</i> Kashmir . . . . .	83
Jashpur State <i>see</i> Central Provinces . . . . .	72

	PAGE.
Jaunsar <i>see</i> United Provinces—Dehra Dun . . . . .	139
Jessore <i>see</i> Bengal . . . . .	14
Jeypore Estate <i>see</i> Madras—Vizagapatam . . . . .	108
Jhabua State <i>see</i> Central India. . . . .	62
Jhalawan <i>see</i> Baluchistan . . . . .	10
Jhang <i>see</i> Punjab . . . . .	122
Jhansi <i>see</i> United Provinces . . . . .	141
Jhelum <i>see</i> Punjab . . . . .	122
Jobat State <i>see</i> Central India . . . . .	62
Jodhpur State <i>see</i> Rajputana—Marwar . . . . .	134
Jubbulpore <i>see</i> Central Provinces . . . . .	72
Junagarh State <i>see</i> Bombay—Kathiawar . . . . .	36
Kachhi <i>see</i> Baluchistan . . . . .	10
Kadur <i>see</i> Mysore . . . . .	111
Kaira <i>see</i> Bombay . . . . .	35
Kalahandi State <i>see</i> Bihar and Orissa . . . . .	19
Kalat State <i>see</i> Baluchistan—Jhalawan, Kharan and Sarawan . . . . .	10, 11
Kangra <i>see</i> Punjab . . . . .	123
Karachi <i>see</i> Bombay—Sind . . . . .	41
Karenni <i>see</i> Burma . . . . .	46
Karimnagar <i>see</i> Hyderabad . . . . .	80
Katha <i>see</i> Burma . . . . .	46
Kathiawar <i>see</i> Bombay . . . . .	35
Kehsi Mansam <i>see</i> Burma—S. Shan States . . . . .	55
Keng Tung <i>see</i> Burma—S. Shan States . . . . .	55
Keonjhar State <i>see</i> Bihar and Orissa . . . . .	19
Kharan <i>see</i> Baluchistan . . . . .	10
Kharsawan State <i>see</i> Bihar and Orissa—Singhbhum . . . . .	30

	PAGE.
Khasi and Jaintia Hills <i>see</i> Assam . . . . .	4
Kishangarh State <i>see</i> Rajputana . . . . .	134
Kistna <i>see</i> Madras . . . . .	91
Kohat <i>see</i> N.-W. Frontier Province . . . . .	119
Kolaba <i>see</i> Bombay . . . . .	38
Kolar <i>see</i> Mysore . . . . .	111
Kolhan Estate <i>see</i> Bihar and Orissa—Singhbhum . . . . .	30
Korea Stato <i>see</i> Central Provinces . . . . .	74
Kothi State <i>see</i> Central India . . . . .	62
Kulu <i>see</i> Punjab —Kangra . . . . .	124
Kumaon <i>see</i> United Provinces—Almora and Garhwal . . . . .	137, 140
Kurnool <i>see</i> Madras . . . . .	92
Kurram <i>see</i> N.-W. Frontier Province . . . . .	120
Kyaukpyu <i>see</i> Burma . . . . .	46
Kyauktat (Kyawk Htap) <i>see</i> Burma—S. Shan States—Yawnghwe . . . . .	56
Kyauksé <i>see</i> Burma . . . . .	47
Kyawkku-Hsiwan (Kyauk-ku-leywa) <i>see</i> Burma—S. Shan States —Myelat . . . . .	55
Ladakh <i>see</i> Kashmir . . . . .	83
Lahaul <i>see</i> Punjab —Kangra . . . . .	124
Lahore <i>see</i> Punjab . . . . .	125
Lakhimpur <i>see</i> Assam . . . . .	6
Lakhtar Stato <i>see</i> Bombay—Kathiawar . . . . .	36
Larkhana <i>see</i> Bombay—Sind . . . . .	42
Las Bela Stato <i>see</i> Baluchistan . . . . .	11
Limbdi Stato <i>see</i> Bombay—Kathiawar . . . . .	37
Madura <i>see</i> Madras . . . . .	95
Magwo <i>see</i> Burma . . . . .	47

	PAGE.
Malabar <i>see</i> Madras . . . . .	95
Malwa <i>see</i> Central India—Gwalior . . . . .	61
Manbhūm <i>see</i> Bihar and Orissa . . . . .	20
Mandalay <i>see</i> Burma . . . . .	48
Mandi State <i>see</i> Punjab—Kangra . . . . .	125
Mandla <i>see</i> Central Provinces . . . . .	74
Manipur State <i>see</i> Assam . . . . .	8
Mawṣūn (Bawzain) <i>see</i> Burma—S. Shan States—Myelat . . . . .	56
Mayurbhanj State <i>see</i> Bihar and Orissa . . . . .	21
Meiktila <i>see</i> Burma . . . . .	48
Mekran <i>see</i> Baluchistan . . . . .	11
Mergui <i>see</i> Burma . . . . .	48
Mewar State <i>see</i> Rajputana . . . . .	135
Mianwali <i>see</i> Punjab . . . . .	125
Midnapore <i>see</i> Bengal . . . . .	14
Minbu <i>see</i> Burma . . . . .	50
Mirzapur <i>see</i> United Provinces . . . . .	142
Monghyr <i>see</i> Bihar and Orissa . . . . .	22
Mōng Kūng <i>see</i> Burma—S. Shan States . . . . .	55
Mōng Long <i>see</i> Burma—N. Shan States . . . . .	54
Mongmit (Momeik) State <i>see</i> Burma . . . . .	50
Mōng Tung <i>see</i> Burma—N. Shan States . . . . .	54
Multan <i>see</i> Punjab . . . . .	126
Myelat <i>see</i> Burma—S. Shan States . . . . .	55
Myingyan <i>see</i> Burma . . . . .	51
Myitkyina <i>see</i> Burma . . . . .	51
Naga Hills <i>see</i> Assam . . . . .	8
Nagpur <i>see</i> Central Provinces . . . . .	74

	PAGE.
Naini Tal <i>see</i> United Provinces . . . . .	142
Nalgunda <i>see</i> Hyderabad . . . . .	80
Nam Tôk <i>see</i> Burma—S. Shan States—Myelat . . . . .	56
Narsinghpur <i>see</i> Central Provinces . . . . .	76
Narukot State <i>see</i> Bombay . . . . .	38
Navanagar State <i>see</i> Bombay—Kathiawar . . . . .	37
Nellore <i>see</i> Madras . . . . .	96
Nilgiri District <i>see</i> Madras . . . . .	98
„ State <i>see</i> Bihar and Orissa—Cuttack . . . . .	16
Nimanpur <i>see</i> Central India—Dhar . . . . .	60
Nimar <i>see</i> Central Provinces . . . . .	76
Nimawar <i>see</i> Central India—Indore . . . . .	61
Nizamabad <i>see</i> Hyderabad . . . . .	80
North Arcot <i>see</i> Madras . . . . .	85
North Hsenwi <i>see</i> Burma—N. Shan States . . . . .	55
North Kanara <i>see</i> Bombay . . . . .	39
Nowgong <i>see</i> Assam . . . . .	8
Nubar <i>see</i> Kashmir . . . . .	83
Padar <i>see</i> Kashmir . . . . .	83
Pakokku <i>see</i> Burma . . . . .	52
Palamau <i>see</i> Bihar and Orissa . . . . .	23
Pal Lahara State <i>see</i> Bihar and Orissa . . . . .	24
Palanpur <i>see</i> Bombay . . . . .	39
Panch Mahals <i>see</i> Bombay . . . . .	39
Panna State <i>see</i> Central India . . . . .	62
Partabgarh <i>see</i> United Provinces . . . . .	142
Patarkechar State <i>see</i> Central India . . . . .	63
Patiala State <i>see</i> Punjab . . . . .	126

	PAGE.
Patna District <i>see</i> Bihar and Orissa . . . . .	24
Patna State <i>see</i> Bihar and Orissa—Sambalpur . . . . .	25
Poona <i>see</i> Bombay . . . . .	30
Porbandar State <i>see</i> Bombay—Kathiawar . . . . .	38
Prome <i>see</i> Burma . . . . .	52
Pudukotai State <i>see</i> Madras . . . . .	98
Puri <i>see</i> Bihar and Orissa . . . . .	24
Pwehla <i>see</i> Burma—S. Shan States—Myelat . . . . .	55
Quetta-Pishin <i>see</i> Baluchistan . . . . .	11
Raichur <i>see</i> Hyderabad . . . . .	81
Raigarh State <i>see</i> Central Provinces . . . . .	76
Raipur <i>see</i> Central Provinces . . . . .	77
Rajpipla State <i>see</i> Bombay . . . . .	39
Ramnad <i>see</i> Madras . . . . .	98
Ranchi <i>see</i> Bihar and Orissa . . . . .	24
Ratnagiri <i>see</i> Bombay . . . . .	40
Rawalpindi <i>see</i> Punjab . . . . .	127
Rewah State <i>see</i> Central India . . . . .	63
Ruby Mines <i>see</i> Burma . . . . .	53
Rudok <i>see</i> Kashmir . . . . .	84
Rupshu <i>see</i> Kashmir . . . . .	84
Sagaing <i>see</i> Burma . . . . .	53
Salem <i>see</i> Madras . . . . .	99
Salween <i>see</i> Burma . . . . .	53
Sambalpur <i>see</i> Bihar and Orissa . . . . .	24
Sandoway <i>see</i> Burma . . . . .	54
Sandur State <i>see</i> Madras—Bellary . . . . .	87
Sangli State <i>see</i> Bombay—Dharwar . . . . .	35

	PAGE.
Santal Parganas <i>see</i> Bihar and Orissa . . . . .	25
Saraikeia State <i>see</i> Bihar and Orissa—Singhbhum . . . . .	30
Sarawan <i>see</i> Baluchistan . . . . .	11
Sarguja State <i>see</i> Central Provinces . . . . .	77
Satara <i>see</i> Bombay . . . . .	41
Saugor <i>see</i> Central Provinces . . . . .	78
Savantvadi State <i>see</i> Bombay—Ratnagiri . . . . .	41
Seoni <i>see</i> Central Provinces . . . . .	78
Shahabad <i>see</i> Bihar and Orissa . . . . .	28
Shahpur <i>see</i> Punjab . . . . .	127
Shahpura Chiefship <i>see</i> Rajputana—Mewar . . . . .	135
Shan States <i>see</i> Burma . . . . .	54
Shimoga <i>see</i> Mysore . . . . .	116
Shirani <i>see</i> N.-W. Frontier Province . . . . .	120
Shwabo <i>see</i> Burma . . . . .	56
Sibi <i>see</i> Baluchistan . . . . .	12
Sibsagar <i>see</i> Assam . . . . .	8
Simla <i>see</i> Punjab . . . . .	128
Simla Hill States <i>see</i> Punjab . . . . .	128
Sind <i>see</i> Bombay . . . . .	41
Singhbhum <i>see</i> Bihar and Orissa . . . . .	28
Singpho Hills <i>see</i> Assam . . . . .	9
Sirmur State <i>see</i> Punjab . . . . .	129
Sirohi State <i>see</i> Rajputana . . . . .	135
South Arcot <i>see</i> Madras . . . . .	85
South Hsenwi <i>see</i> Burma—N. Shan States . . . . .	55
South Kanara <i>see</i> Madras . . . . .	101
Spiti <i>see</i> Punjab—Kangra . . . . .	125



	PAGE.
Suket State <i>see</i> Punjab—Simla Hill States . . . . .	129
Sukkur <i>see</i> Bombay—Sind . . . . .	42
Surat <i>see</i> Bombay . . . . .	42
Talcher State <i>see</i> Bihar and Orissa . . . . .	31
Tanjore <i>see</i> Madras . . . . .	101
Tavoy <i>see</i> Burma . . . . .	57
Tawng Peng State <i>see</i> Burma—N. Shan States . . . . .	55
Tehri Garhwal State <i>see</i> United Provinces . . . . .	143
Tenasserim <i>see</i> Burma—Mergui and Tavoy . . . . .	48, 57
Thana <i>see</i> Bombay . . . . .	42
Tharrawaddy <i>see</i> Barma . . . . .	58
Thaton <i>see</i> Burma . . . . .	58
Thayetmyo <i>see</i> Burma . . . . .	59
Tinnevely <i>see</i> Madras . . . . .	101
Tonk State <i>see</i> Rajputana . . . . .	135
Toungoo <i>see</i> Burma . . . . .	59
Travancore State <i>see</i> Madras . . . . .	102
Trichinopoly <i>see</i> Madras . . . . .	104
Tumkur <i>see</i> Mysore. . . . .	117
Twenty-four Parganas <i>see</i> Bengal . . . . .	15
Udaipur State <i>see</i> Central Provinces . . . . .	78
<i>see</i> Rajputana—Mewar . . . . .	135
Vizagapatam <i>see</i> Madras. . . . .	105
Warangal <i>see</i> Hyderabad . . . . .	81
Wardha <i>see</i> Central Provinces . . . . .	78
Waziristan <i>see</i> N.-W. Frontier Province . . . . .	120
Wun <i>see</i> Central Provinces—Yeotmal . . . . .	78
Wuntho State <i>see</i> Burma—Katha . . . . .	46

# LIST OF DISTRICTS AND STATES.

xiii

	PAGE.
Wynaad <i>see</i> Madras—Malabar . . . . .	96
Yamethin <i>see</i> Burma . . . . .	59
Yawnghwe <i>see</i> Burma—S. Shan States . . . . .	56
Yengan <i>see</i> Burma—S. Shan States—Myclat . . . . .	56
Yeotmal <i>see</i> Central Provinces . . . . .	78
Zangskar <i>see</i> Kashmir . . . . .	84
Zhob <i>see</i> Baluchistan . . . . .	12

# INDEX OF LOCALITIES.

On the degree sheets now being issued by the Survey of India, referred to in this index, the corrected values of the co-ordinates of longitude are given, as compared with those in the 'Atlas of India,' which is now out of print.

A correction of  $-3' 36''$  should therefore be applied to the co-ordinates of longitude inserted in the "Notes on Economic Minerals," in order that they may correspond with those shown on the degree sheets.

	SHEET.	PAGE.
<b>ADEN, mercury . . . . .</b>	..	363
„ salt . . . . .	..	434
„ soda . . . . .	..	453
<b>AFGHANISTAN—</b>		
Ak Robat, coal . . . . .	33 N/9	67
Chahil valley, coal . . . . .	33 M/10	67
Charbagh, gold . . . . .	38 J/6	190
Dasht-i Safed, sulphur . . . . .	33 M/15	470
Dherband, copper . . . . .	— —	114
Dobandi valley, copper . . . . .	38 G/5	114
Farangal, silver-lead . . . . .	38 A/12	291
Fuligird (Faragard), antimony . . . . .	38 B/13	10
Ghazni, gypsum . . . . .	38 C/6	225
Ghorband, zinc . . . . .	38 A/12	488
Gurmsael (Garmsir), salt . . . . .	30 N/2	434
Hajigak pass, iron . . . . .	38 B/2	235
Hazara Jat, lead . . . . .	33 K	291
„ sulphur . . . . .	„	470
Jagdallak, ruby . . . . .	38 F/15	177
„ spinel . . . . .	„	182
Jalalabad, gold . . . . .	38 J/7	190

	SHEET.	PAGE.
<b>AFGHANISTAN—contd.</b>		
Kahmard, gypsum . . . . .	33 M	225
Kalu, iron . . . . .	38 B/2	235
Kandahar, chrysolite . . . . .	34 E/10	158
„ chrysotile . . . . .	„	158
„ gold . . . . .	„	190
„ gypsum . . . . .	„	225
„ nickel . . . . .	„	391
Karatiza hill, copper . . . . .	38 G/5	114
Khost valley, asbestos . . . . .	38 G/15	15
Kinchak, antimony . . . . .	38 A/16	10
„ lead . . . . .	„	291
Koh-i-Daman, graphite . . . . .	—	219
Kotal-i Maulana, copper . . . . .	38 C/10	114
Kunar, gold . . . . .	28 J	189
Kushk-i-Nakhud, salt . . . . .	34 A/10	434
Landi Kotal, alum . . . . .	38 N/4	4
Lughman, gold . . . . .	38 J	189
Maidan, marble . . . . .	38 B/15	28
Panjshir, iron . . . . .	38 E	235
Pare Angure, salt . . . . .	38 G/9	434
Peshat, gold . . . . .	38 N/2	189
Pir Kisri, mercury . . . . .	30 K/12	363
Saighan, gypsum . . . . .	33 M	225
Shah Maksud range, copper . . . . .	34 E/5	114
„ „ „ lead . . . . .	„	291
Shibar, copper . . . . .	—	114
Shisha Alang, coal . . . . .	33 M/6	67

	SHEET.	PAGE.
<b>AFGHANISTAN—contd.</b>		
Siah Koh, marble . . . . .	38 F/15	28
Sikaram, stentite . . . . .	38 F/16	457
Silawat Pass, iron . . . . .	38 F/7	235
Sukht-i-Chenar, iron . . . . .	—	235
Tirin R., lead . . . . .	33 K/12	291
Tor Sappar, graphite . . . . .	38 N/4	219
Ursuk, lead . . . . .	38 C/14	291
Zanakhan, lead . . . . .	38 C/10	291
<b>ANDAMAN ISLANDS—</b>		
Balni creek, manganese . . . . .	86 C/16	319
Chakargaon, chromite . . . . .	87 A/10	62
Homfray's Ghat, serpentine . . . . .	87 A/10	28
Little Andaman, mercury . . . . .	87 B	363
Rang-u-Chang, copper . . . . .	87 A/10	114
Ross I., lignite . . . . .	87 A/10	306
South Andaman, sandstone . . . . .	87 A	28
South Corbyn, limestone . . . . .	87 A/10	28
Viper I., lignite . . . . .	87 A/10	306
<b>ASSAM</b>		
<b>Abor Hills—</b>		
Dirjmu R., lignite . . . . .	83 L/13	306
Geku, iron . . . . .	82 P/3	236
Sirpo R., coal . . . . .	82 P/8	67
Sisi R., copper . . . . .	82 L/13	114
<b>Aka Hills—</b>		
Borholi R., coal . . . . .	83 A/12	67

	SHEET.	PAGE.
<b>ASSAM—contd.</b>		
<b>Bor Kamti</b> , copper . . . . .	—	114
„ silver-lead . . . . .	—	291
<b>Cachar</b> , salt . . . . .	..	434
Badarpur, petroleum . . . . .	83 D/9	399
Kopili R., mineral water . . . . .	83 C/10	373
Larang R., petroleum . . . . .	83 C/12	399
Masimpur „ . . . . .	83 D/13	399
Saraspur hills „ . . . . .	83 D/10	399
Siltek (Shialtek) „ . . . . .	83 D/9	399
<b>Daphla Hills—</b>		
Dikrang R., coal . . . . .	83 E/12	67
<b>Darrang—</b>		
Barapani (?Borholi) R., gold . . . . .	83 B/13	191
Buragaon (Bargang) R., „ . . . . .	83 F/1	191
<b>Garó Hills—</b>		
Daranggiri, coal . . . . .	78 K/14	68
Domalgiri, kaolin . . . . .	78 K/2	284
Harigaon, coal . . . . .	78 K/2	68
Mahendraganj, kaolin . . . . .	78 G/15	284
Pundengru, coal . . . . .	78 K/15	68
Rongrenggiri, „ . . . . .	78 K/10	68
Siju „ . . . . .	78 K/11	68
Tura, kaolin . . . . .	78 K/2	284
<b>Khasi &amp; Jaintia Hills—</b>		
Borsora, coal . . . . .	78 O/4	70
Chela, petroleum . . . . .	78 O/12	399
Cherra Punji, coal . . . . .	78 O/11	68

—	SHEET.	PAGE.
<b>ASSAM—contd.</b>		
<b>Khasi &amp; Jaintia Hills—contd.</b>		
Cherra Punji, iron . . . . .	78 O/11	236
„ „ limestone . . . . .	„	28
„ „ sandstone . . . . .	„	29
Dedum hill, coal . . . . .	„	69
Dhamalia R., petroleum . . . . .	78 O/8	399
Dona R., „ . . . . .	83 C/8	399
Dongchala, coal . . . . .	83 C/7	70
Jarain „ . . . . .	83 C/3	69
Jawai, fire-clay . . . . .	83 C/3	146
Khasimara, petroleum . . . . .	78 O/12	399
Lairangao, coal . . . . .	78 O/11	69
Lakadong „ . . . . .	83 C/8	69
Langrin „ . . . . .	78 O/4	70
Mao-be-larkar, coal . . . . .	78 O/15	69
Maophlang „ . . . . .	78 O/15	69
Maosandram „ . . . . .	78 O/11	69
Molim, iron . . . . .	78 O/15	236
Nokhara, coal . . . . .	83 C/7	69
Nongmawoit, corundum . . . . .	78 O/2	138
Nongryniew (Noringyao) gold . . . . .	78 O/2	138
Nongspong, iron . . . . .	78 O/11	236
Patarknang, corundum . . . . .	78 O/2	138
Riandu R., „ . . . . .	78 O/2	138
Satunga, coal . . . . .	83 C/7	69
Surarim, iron . . . . .	78 O/11	236
Than-ji-nath, coal . . . . .	78 O/15	70

	SHEET.	PAGE.
<b>ASSAM—contd.</b>		
<b>Khasi &amp; Jaintia Hills—contd.</b>		
Umblay R., coal . . . . .	78 O/4	70
Um Plu „ . . . . .	87 O/3	70
Um Rileng „ . . . . .	78 O/14	70
Umsamat „ . . . . .	78 O/11	69
Wapung „ . . . . .	83 C/7	70
<b>Lakhimpur—</b>		
Bappa Pung, petroleum . . . . .	83 M/11	400
Borhat, coal . . . . .	83 M/8	70
„ petroleum . . . . .	„	401
„ salt . . . . .	„	434
Buri Dihing R., gold . . . . .	83 M/15	191
Dekhia Juli, petroleum . . . . .	83 M/7	400
Derpai R., gold . . . . .	83 I/6	192
Dibong R., „ . . . . .	82 P/16	191
Digarū Mukh, gold . . . . .	92 A/1	191
Digboi, petroleum . . . . .	83 M/11	400
Dihang R., gold . . . . .	83 M/9	191
„ „ limestone . . . . .	„	29
Dikrang R., gold . . . . .	83 E/16	191
Disang R., coal . . . . .	83 M/8	71
„ „ petroleum . . . . .	„	401
Dora R., kaolin . . . . .	92 A/5	283
Guri Mara, gold . . . . .	83 M/13	191
Hapjan, petroleum . . . . .	83 M/8	401
Hilika „ . . . . .	83 M/11	401
Hone Jan, gold . . . . .	83 M/11	191



	SHEET.	PAGE.
<b>ASSAM—contd.</b>		
<b>Lakhimpur—contd.</b>		
Jaipur, coal . . . . .	83 M/7	70
„ iron . . . . .	„	236
Janglu (Joglo) Pani, gold . . . . .	83 M/11	191
Lohit-Brahmaputra „ . . . . .	83 M/13	191
Makum, alum shale . . . . .	83 M/11	4
„ coal . . . . .	„	71
„ fire-clay . . . . .	„	146
„ petroleum . . . . .	„	401
„ pyrites . . . . .	„	470
Nahor Pung, petroleum . . . . .	83 M/8	401
Namchik (Namrup) R., coal . . . . .	92 A/3	72
„ „ „ petroleum . . . . .	92 A/3	401
Namdang R., coal . . . . .	83 M/11	71
Nizamghat, gold . . . . .	82 P/16	191
Noa Dihing R., gold . . . . .	83 M/15	192
„ „ „ platinum . . . . .	„	426
Parghat, gold . . . . .	92 A/1	192
Pasighat, „ . . . . .	82 P/8	191
„ lignite . . . . .	„	306
Sadiya, salt . . . . .	83 M/9	434
Sial Ghar, petroleum . . . . .	83 M/7	400
Sibia Mukh, gold . . . . .	83 M/9	191
Sisi R., „ . . . . .	83 I/10	192
Subansiri R., „ . . . . .	83 I/6	192
Supkong, petroleum . . . . .	83 M/15	402
Tenga Pani, gold . . . . .	92 A/1	192

	SHEET.	PAGE.
<b>ASSAM—contd.</b>		
<b>Lakhimpur—contd.</b>		
Tirap R., coal . . . . .	83 M/15	71
Manipur, copper . . . . .	..	114
„ fullers' earth . . . . .	..	150
„ iron . . . . .	..	237
Naga Hills, salt . . . . .	..	434
Tepe R., slate . . . . .	83/K	29
Tuzu R., „ . . . . .	83/K	29
<b>Nowgong—</b>		
Gudu, petroleum . . . . .	83 G/5	402
Jangthang, salt . . . . .	—	435
Longloi hill, coal . . . . .	83 G/1	72
Meyongdisa R., petroleum . . . . .	83 G/5	402
<b>Sibsagar—</b>		
Bor Pathar, kaolin . . . . .	83 F/15	284
Chingan, petroleum . . . . .	83 J/13	402
Deopani R., limestone . . . . .	83 F/16	29
Dhansiri R., gold . . . . .	83 F/15	192
„ „ kaolin . . . . .	„	284
Dikhu R., coal . . . . .	83 J/13	73
„ „ vivianite . . . . .	„	423
Disai R., coal . . . . .	83 J/6	72
„ „ gold . . . . .	„	192
Doigrung R., coal . . . . .	83 F/15	72
„ „ limestone . . . . .	„	29
Golaghat, iron . . . . .	83 F/14	236

	SHEET.	PAGE.
<b>ASSAM—<i>contd.</i></b>		
<b>Sibsagar—<i>contd.</i></b>		
Gota Jan, gold . . . . .	83 J/6	192
Haria Jan, limestone . . . . .	83 F/16	29
Hattigar, iron . . . . .	—	236
Jamuna R., coal . . . . .	83 G/5	72
„ „ limestone . . . . .	„	29
Janji R., coal . . . . .	83 J/10	72
„ „ gold . . . . .	„	192
Japu, coal . . . . .	83 J/6	72
Kanugaon, petroleum . . . . .	83 M/4	402
Mikir hills, iron . . . . .	83 F	237
Nambor R., coal . . . . .	83 F/15	72
„ „ kaolin . . . . .	„	284
„ „ limestone . . . . .	„	29
„ „ mineral water . . . . .	„	373
Nazira, coal . . . . .	83 J/13	73
„ peat . . . . .	„	396
Pangso, limestone . . . . .	83 F/15	29
Saffrai R., coal . . . . .	83 J/13	73
Tel Pung, petroleum . . . . .	83 J/13	402
Tiru R., coal . . . . .	83 J/13	73
Tirugaon, iron . . . . .	83 J/13	236
<b>Singpho Hills—</b>		
Maiobum, coal . . . . .	92 A/7	73
„ petroleum . . . . .	„	402
Nchongbum „ . . . . .	92 A/10	402

	SHEET.	PAGE.
<b>BALUCHISTAN—</b>		
<b>Bolan Pass—</b>		
Draj Bent, sulphur . . . . .	—	470
Gokurth „ . . . . .	34 O/6	470
Kirta, mineral water . . . . .	34 O/6	373
„ petroleum . . . . .	„	403
Mach, coal . . . . .	34 O/5	73
Sor range, coal . . . . .	34 O/5	73
<b>Jhalawan, gypsum . . . . .</b>	—	225
Bania Pani, magnesite . . . . .	35 I/7	312
Kil Chotok, sulphate of iron . . . . .	35 I/9	466
Ladon pass „ „ . . . . .	35 I/9	466
Pab hills, manganese . . . . .	35 J	319
Shekran, antimony . . . . .	35 I/5	10
„ lead . . . . .	„	291
„ manganese . . . . .	„	319
<b>Kachhi—</b>		
Lakha, mineral water . . . . .	34 P/8	373
Pulej, gypsum . . . . .	39 C/8	225
Sanni, alunogen . . . . .	34 O/12	8
„ petroleum . . . . .	„	403
„ sulphur . . . . .	„	471
Shahpur, gypsum . . . . .	39 D/6	225
Uch, gypsum . . . . .	39 D/10	225
„ mineral water . . . . .	„	374
<b>Kharan—</b>		
Koh-i Sultan, sulphate of iron . . . . .	30 K/12	466
„ „ sulphur . . . . .	„	470

	SHEET.	PAGE.
<b>BALUCHISTAN—<i>contd.</i></b>		
<b>Kharan—<i>contd.</i></b>		
Ras Koh, copper . . . . .	34 H/1	115
Robat „ . . . . .	30 O/10	115
Saindak, „ . . . . .	30 G/11	115
„ lead . . . . .	„	291
<b>Las Bela—</b>		
Aghor, petroleum . . . . .	35 G/7	403
Kan Berar, mineral water . . . . .	35 K/3	373
„ „ sulphur . . . . .	„	471
Pabni Chauki, barytes . . . . .	35 K/15	18
Ras Kachari, petroleum . . . . .	35 G/15	403
Sarmowli R., barytes . . . . .	—	8
Shah Bellawl, copper . . . . .	35 O/1	115
<b>Mekran, gypsum . . . . .</b>	..	225
Golkurt, sulphur . . . . .	35 C/3	471
Gwadur, petroleum . . . . .	31 K/8	403
<b>Quetta-Pishin, limestone . . . . .</b>	..	29
Ghaziaband pass, gypsum . . . . .	34 J/15	225
Khanozai, chromite . . . . .	34 N/6	63
Kil' Abdulla, antimony . . . . .	34 J/10	11
Kojak Amran range, copper . . . . .	34 J	115
Pishin valley, salt . . . . .	34 K/2	435
<b>Sarawan, gypsum . . . . .</b>	..	225
Johan, coal . . . . .	34 K/15	74
„ copper . . . . .	„	115
Zarakhu R., coal . . . . .	34 N/4	74
Ziarat, copper . . . . .	34 K/15	115

	SHEET.	PAGE.
<b>BALUCHISTAN—contd.</b>		
<b>SIBI—</b>		
Bugti hills, gypsum . . . . .	39 H	226
Chamarlang, coal . . . . .	39 F/8	74
Duki „ . . . . .	39 B/12	74
Harnai, „ . . . . .	34 N/16	74
„ petroleum . . . . .	„	403
Khattan, gypsum . . . . .	39 C/6	226
„ mineral water . . . . .	„	373
„ petroleum . . . . .	„	404
„ sulphur . . . . .	„	471
Khost, coal . . . . .	34 N/12	74
Mamand, gypsum . . . . .	39 C/10	226
Sharigh, coal . . . . .	34 N/12	75
Spintangi, gypsum . . . . .	39 C/1	226
„ mineral water . . . . .	„	373
Zhob, chromite . . . . .	..	63
„ sulphate of iron . . . . .	..	466
<b>BARREN ISLAND, sulphur . . . . .</b>	<b>86 H/15</b>	<b>471</b>
<b>BENGAL—</b>		
Bankura, iron . . . . .	..	237
Malliari, kaolin . . . . .	73 M/3	284
Susunia hill, quartzite . . . . .	73 I/15	30
<b>Birbhum—</b>		
Ballia-Narainpur, iron . . . . .	72 P/12	237
Damra „ . . . . .	72 P/12	237
Deocha „ . . . . .	72 P/12	237

	SHEET.	PAGE.
<b>BENGAL—<i>contd.</i></b>		
<b>Birbhum—<i>contd.</i></b>		
Mahomed Bazaar iron. . . . .	73 M/9	237
Mallarpur „ . . . . .	72 P/12	237
Tantipara, mineral water . . . . .	73 M/5	374
<b>Burdwan—</b>		
Barakar, coal . . . . .	73 I/14	79
„ iron . . . . .	„	239
„ manganese . . . . .	„	320
„ sandstone . . . . .	„	30
Barul (Badul), iron . . . . .	73 M/2	238
Kulti „ . . . . .	73 I/14	239
Malchaiti, manganese . . . . .	—	319
Mallapur, fireclay . . . . .	—	146
Raniganj, coal . . . . .	73 M/2	79
„ phosphate of lime . . . . .	„	424
„ pottery clay . . . . .	„	284
<b>Chittagong—</b>		
Babu (Bharat)-Khund, mineral water . . . . .	79 N/10	374
Kumira, petroleum . . . . .	79 N/10	404
Sita-Khund „ . . . . .	79 N/10	404
<b>Darjeeling, building materials</b> . . . . .	..	30
Chol R., copper . . . . .	78 B/9	116
Chochi R., „ . . . . .	78 B/5	116
Darjeeling, kaolin . . . . .	78 A/8	284
Kalimpong, copper . . . . .	78 A/12	116
Komai „ . . . . .	78 A/16	116
Lisu R., coal . . . . .	78 B/5	75

	SHEET.	PAGE.
<b>BENGAL—<i>contd.</i></b>		
<b>Darjeeling—<i>contd.</i></b>		
Lohargarh, iron . . . . .	78 B/1	239
Mahanadi, copper . . . . .	78 B/5	116
Mangphu „ . . . . .	78 B/5	116
Mangwa „ . . . . .	78 A/8	116
Mechi, mineral water . . . . .	78 B/5	374
Minchu „ „ . . . . .	78 A/8	374
Pankabari, coal . . . . .	78 B/5	75
„ copper . . . . .	„	116
Pashok, copper . . . . .	78 A/8	116
Ramthi R., coal . . . . .	—	75
Rani Hat., copper . . . . .	78 B/5	116
Re Ung „ . . . . .	78 B/9	117
Sampthar hill, arsenic . . . . .	78 B/9	14
„ „ copper . . . . .	„	117
Sikbhar, iron . . . . .	78 A/12	240
Sivok (Chawa) R., lignite . . . . .	78 B/5	306
Sukkam R., kaolin . . . . .	—	284
Tindharia, coal . . . . .	78 B/5	75
Yongri hill, copper . . . . .	78 B/9	117
<b>Jalpaiguri—</b>		
Baxa, copper . . . . .	78 F/9	117
„ lignite . . . . .	„	306
Jainti „ . . . . .	78 F/10	306
<b>Jessore—</b>		
Khajura, mineral water . . . . .	79 E/8	374
Midnapore, potstone . . . . .	..	457



	SHEET.	PAGE.
<b>BENGAL—contd.</b>		
<b>Midnapore—contd.</b>		
Kasai R., gold . . . . .	73 N/7	193
Tamluk, salt . . . . .	73 N/15	435
<b>24-Parganas, salt . . . . .</b>	..	435
„ „ sulphate of magnesia . . . . .	..	467
Chitpur, peat . . . . .	79 B/6	396
Jamalpur, vivianite . . . . .	79 B/10	423
Sealdah, peat . . . . .	79 B/6	396
Silver Tree G. T. S., manganese . . . . .	79 C/1	319
<b>BHUTAN—</b>		
Balla, steatite . . . . .	78 F/5	457
Chamurchi, copper . . . . .	78 F/1	117
Kala Pani, coal . . . . .	78 N/13	76
Kangra Chu, gypsum . . . . .	78 N/1	226
Paro, iron . . . . .	78 E/7	240
<b>BIHAR &amp; ORISSA—</b>		
<b>Angul—</b>		
Kankerai, iron . . . . .	73 H/1	245
<b>Athmalik—</b>		
Deoljhari, mineral water . . . . .	73 D/10	375
<b>Balusore, salt—</b> . . . . .	..	435
<b>Bhagalpur—</b>		
Dudijor, silver-lead . . . . .	72 L/10	292
Gauripur (Phaga), silver-lead . . . . .	72 L/13	292
Gonora, lead . . . . .	72 L/10	292
Karda „ . . . . .	72 L/10	292

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—<i>contd.</i></b>		
<b>Bhagalpur—<i>contd.</i></b>		
Katauria, iron . . . . .	72 L/10	240
Kejuria, silver-lead . . . . .	72 L/10	292
Khardeh hill, kaolin . . . . .	72 O/7	284
Kharikhar, silver-lead . . . . .	72 L/13	292
Patarghatta hill, fire-clay . . . . .	72 O/3	146
„ „ fullers' earth . . . . .	„	150
„ „ kaolin . . . . .	„	284
<b>Bonai—</b>		
Bonaigarh, gold . . . . .	73 C/13	194
Durjing „ . . . . .	73 C/13	194
<b>Cuttack, laterite</b> . . . . .	..	30
„ salt . . . . .	..	435
Debnadi, kankar . . . . .	73 H/15	31
Killah Mootree, sandstone . . . . .	73 H/11	31
Kukker (Kakari), kaolin . . . . .	73 H/14	285
Mahanadi R., garnet . . . . .	73 H	170
Naraj, kaolin . . . . .	73 H/15	285
Nilgiri hills, corundum . . . . .	73 K	139
„ „ potstone . . . . .	73 K	457
<b>Gangpur—</b>		
Bisra, limestone . . . . .	73 F/4	31
Gariajhor, manganese . . . . .	73 B/4	319
Giringkela, gold . . . . .	64 N/16	194
Ib R., „ . . . . .	73 B/4	194
Bourkela, limestone . . . . .	73 B/16	31

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—contd.</b>		
<b>Gaya—</b>		
Brahmjuni hill, potstone . . . . .	72 H/1	457
Dabur, mica . . . . .	72 H/10	365
Gaya, ochre . . . . .	72 H/1	392
Hangriyo (Hanreca), alum . . . . .	72 H/5	4
Nawada, soda . . . . .	72 H/9	453
Rajauli, mica . . . . .	72 H/10	365
Singar, columbite & tantalite . . . . .	72 H/6	429
„ pitchblende . . . . .	„	431
„ triplite . . . . .	„	424
<b>Hazaribagh, molybdenum . . . . .</b>	<b>72 H/6</b>	<b>389</b>
Ballia, coal . . . . .	73 E/5	77
Baragunda, copper . . . . .	72 L/4	117
„ lead . . . . .	„	292
Barhamasia, „ . . . . .	72 L/7	292
Belkapi (Suraj Khund), mineral water . . . . .	72 H/12	375
Bendi, mica . . . . .	72 H/6	365
Bokaro R., coal . . . . .	73 E/9	76
„ „ sandstone . . . . .	„	31
Chappatand, tin . . . . .	72 H/14	476
Charki, mica . . . . .	72 H/14	365
Chopé, coal . . . . .	72 H/4	76
Dabur, arsenic . . . . .	72 H/14	14
Dhab arsenic . . . . .	72 H/14	14
„ mica . . . . .	„	365
Doari, mineral water . . . . .	72 H/4	375
Domchanch, mica . . . . .	72 H/11	365

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—<i>contd.</i></b>		
<b>Hazaribagh—<i>contd.</i></b>		
Gawan mica . . . . .	72 H/14	365
Gharanji „ . . . . .	72 L/2	365
Giridih, apatite . . . . .	72 L/8	424
„ coal . . . . .	„	76
Gondulpur, coal . . . . .	73 E/5	78
Gulgo, copper . . . . .	72 L/7	118
„ lead . . . . .	„	293
Hazaribagh, garnet . . . . .	73 E/5	170
„ iron . . . . .	„	240
Hisatu, antimony . . . . .	73 E/1	11
„ lead . . . . .	„	293
Indra-Jurba, mineral water . . . . .	73 E/5	375
Itkhuri, coal . . . . .	72 H/3	77
Karanpura, coal . . . . .	73 E/5	77
„ iron . . . . .	„	240
Karharbari, coal . . . . .	72 L/8	76
„ iron . . . . .	„	241
Katkamsandi, manganese . . . . .	72 H/4	320
„ mineral water . . . . .	„	375
Kesodih, mineral water . . . . .	72 L/4	375
Khesmi, lead . . . . .	72 L/7	292
Kodarma, apatite . . . . .	72 H/11	424
„ columbite . . . . .	„	429
„ mica . . . . .	„	365
Kowa Gandwani, mineral water . . . . .	73 E/6	375
Lurgutha, mineral water . . . . .	—	375

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—contd.</b>		
<b>Hazaribagh—contd.</b>		
Mehandadi, lead . . . . .	72 L/7	292
Nauwadih „ . . . . .	72 L/7	292
Nurunga (Nurgo), tin . . . . .	72 L/4	476
Nyatand, lead . . . . .	72 H/10	293
Parseya „ . . . . .	72 H/16	293
Pihira, tin . . . . .	72 H/14	477
Pindarkun, mineral water . . . . .	72 H/4	375
Ramgarh, coal . . . . .	73 E/10	78
„ iron . . . . .	„	241
Simratari, tin . . . . .	72 H/14	477
Sirsia, manganese . . . . .	72 L/3	320
Sosonia, mineral water . . . . .	—	375
Tendwa, iron . . . . .	73 E/1	241
Tendwaha R., beryl . . . . .	72 H/14	156
Tisri, mica . . . . .	72 L/2	366
Tutki Ghat, corundum . . . . .	73 E/9	138
<b>Kalahandi—</b>		
Bondesor, diamond . . . . .	65 M/1	159
Densurgi, graphite . . . . .	64 P/8	219
Kasipur, marble . . . . .	65 M/3	31
Koladi Ghat, graphite . . . . .	65 M/5	219
Korlapat hill, bauxite . . . . .	65 M/2	20
Olatura, cobalt . . . . .	64 P/11	112
„ iron . . . . .	„	241
„ manganese . . . . .	„	320
Keonjhar, potstone . . . . .	..	457

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—contd.</b>		
Manbhum, kaolin . . . . .	..	285
„ slate . . . . .	..	31
Ambikanagar, iron . . . . .	73 J/13	241
Baghmara, limestone . . . . .	73 I/14	31
Bamni R., gold . . . . .	—	194
Bauch, iron . . . . .	73 J/9	241
Beldi, silver-lead . . . . .	73 J/5	293
Dekia „ „ . . . . .	73 J/9	293
Dhobni, gold . . . . .	73 L/8	194
Ghagra, lead . . . . .	73 J/9	293
Guram R., platinum . . . . .	73 J/5	426
Hansipathar, limestone . . . . .	73 I/10	31
Jhanjijhore, lead . . . . .	73 J	293
Jharia, coal . . . . .	73 I/6	78
Kalianpur, copper . . . . .	73 I/4	118
Karkari R., gold . . . . .	73 E/16	194
Katrah, iron. . . . .	73 J/13	241
Kowari R., gold . . . . .	73 I/8	194
Kushboni, lead . . . . .	73 J	293
Lataparah „ . . . . .	73 J	293
Lewshai „ . . . . .	73 J	293
Manbazaar, ilmenite . . . . .	73 I/12	431
„ iron . . . . .	„	241
Moisara, potstone . . . . .	73 E/16	457
Mutgoda „ . . . . .	73 J/13	457
Nannah, lead . . . . .	73 J/9	293
Parada, „ . . . . .	73 J/9	293

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—contd.</b>		
<b>Manbhum—contd.</b>		
Patkum, gold . . . . .	73 E/16	194
Purda, copper . . . . .	73 J/9	118
Salbanni, corundum . . . . .	73 I/8	138
„ kyanite . . . . .	„	174
„ rutile . . . . .	„	432
Sheopur (Sarsa), mineral water . . . . .	73 I/10	375
Subarnarikha R., gold . . . . .	73 J	194
Supur, ilmenite . . . . .	73 I/16	432
Tatlui (Tantolya), mineral water . . . . .	73 I/10	376
Telaia, iron . . . . .	73 I/1	241
Teludi „ . . . . .	73 I/14	241
Tutko R., gold . . . . .	73 J/9	194
<b>Mayurbhanj, ochre . . . . .</b>	..	392
Badampahar, iron . . . . .	73 J/4	242
Bangarposi, mica . . . . .	73 J/12	366
Baripada, pottery clay . . . . .	73 K/9	285
Borai R., gold . . . . .	73 J/3	194
Godia R., „ . . . . .	73 J/7	194
Gohadongri, gold . . . . .	73 J/7	194
Gurguria, potstone . . . . .	73 K/5	458
Gurumaishini, iron . . . . .	73 J/7	242
Jamgodia, mica . . . . .	73 J/12	366
Kuliana, manganese . . . . .	73 J/12	320
Kudersai, gold . . . . .	73 J/3	194
Malamghatti pass, pyrites . . . . .	73 J/3	472
Nulungi, potstone . . . . .	73 K/9	458

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—contd.</b>		
<b>Mayurbhanj—contd.</b>		
Okampad, iron . . . . .	73 J/8	242
Raibedi, mica . . . . .	73 J/3	366
Rangom hill, asbestos . . . . .	73 J/3	15
Ruasi, gold . . . . .	73 J/7	194
Sankrai R., mica . . . . .	73 J/12	366
Sapgora, gold . . . . .	73 J/3	194
Sirsa, mica . . . . .	73 J/12	366
Tiring († Tiringdih), mica . . . . .	73 J/2	366
„ potstone . . . . .	„	458
<b>Monghyr—</b>		
Bhimband, mineral water . . . . .	72 K/8	376
Bhurka „ „ . . . . .	72 K/11	376
Goria Koh Ghat, asbestos . . . . .	72 K/8	16
Jamalpur, slate . . . . .	72 K/7	32
Jamui, corundum . . . . .	72 L/1	138
Janam Khund (Bharari) mineral water . . . . .	72 K/8	376
Katnowa hills, manganese . . . . .	72 L/5	320
Kharekpur hills, silver-lead . . . . .	72 K	293
„ „ slate . . . . .	„	32
Lachmi Khund, mineral water . . . . .	72 K/8	376
Laheta, hornblende-schist . . . . .	—	32
Mahaisri, mica . . . . .	72 L/6	366
Nawadih (Jha-Jha), mica . . . . .	72 L/5	366
Pananao hill, columbite & tantalite . . . . .	72 L/5	430
Panchblur, mineral water . . . . .	72 K/8	376
Pirpahari hill, asbestos . . . . .	72 K/11	16



	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—contd.</b>		
<b>Monghyr—contd.</b>		
Rameswar Khund, mineral water . . . . .	72 K/8	376
Rishi Khund           "           " . . . . .	72 K/8	376
Shekhpura, soda . . . . .	72 G/16	453
Singhi Rikh Tatal Pani, mineral water . . . . .	72 K/4	376
Sita Khund, mineral water . . . . .	72 K/11	376
<b>Palamau—</b>		
Aurunga R., coal . . . . .	73 A/5	82
Balumath, iron . . . . .	73 A/13	244
Balunagar           " . . . . .	73 A/9	244
Barikhap, lead . . . . .	73 A/13	293
Daltonganj, coal . . . . .	72 D/4	82
"       copper . . . . .	"	118
Deredag, limestone . . . . .	73 A/9	32
Ghorasan R., coal . . . . .	73 A/1	83
Hutar               " . . . . .	73 A/1	83
Jarum, mineral water . . . . .	73 A/9	376
Jinjoi R., coal . . . . .	72 D/4	82
Kokraha (Thatha), mineral water . . . . .	73 A/1	377
Maila R., limestone . . . . .	73 A/5	32
Morwai, iron . . . . .	73 A/1	244
Navadih           " . . . . .	73 A/1	244
Neturhat, bauxite . . . . .	73 A/7	20
"       iron . . . . .	"	244
Olherpat (Oieypat), limestone . . . . .	73 A/9	32
Pandua, coal . . . . .	72 D/4	82
Rajbar, iron . . . . .	73 A/9	244

	SHEET.	PAGE
<b>BIHAR &amp; ORISSA—contd.</b>		
<b>Palaman—contd.</b>		
Rajhara, coal . . . . .	72 D/4	82
Simah, diamond . . . . .	73 A/6	159
Singra, coal . . . . .	72 D/4	82
Pal Lahara, iron . . . . .	73 G/3	243
<b>Patna—</b>		
Rajghir, mineral water . . . . .	72 G/8	377
Tapoban „ „ . . . . .	72 G/8	377
<b>Puri—</b>		
Atari, mineral water . . . . .	73 H/12	375
Chilka lake, monazite . . . . .	74 E	390
„ salt . . . . .	„	435
Khurda, kaolin . . . . .	73 H/12	285
<b>Ranchi—</b>		
Sankh R., diamond . . . . .	73 A/3	159
Sili, lead . . . . .	73 E/15	294
Sambalpur, laterite . . . . .	..	32
Amdiah, iron . . . . .	64 O/15	244
Hira Khund, diamond . . . . .	64 O/14	160
Ib R., gold . . . . .	64 O/14	195
Jhuman (Jumari), silver-lead . . . . .	64 O/14	294
Kujerma, limestone . . . . .	73 C/1	32
Kutarbaga, iron . . . . .	73 C/2	244
Mahanadi R., diamond . . . . .	64 O/14	160
„ „ gold . . . . .	„	195
Sambalpur, gold . . . . .	64 O/15	195
Tahud „ . . . . .	64 O/14	195

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—contd.</b>		
<b>Sambalpur—contd.</b>		
Talpuchia, lead . . . . .	73 C/1	294
<b>(Patna)—</b>		
Bijkomar, rock crystal . . . . .	64 P/6	176
Bolangir, limestone . . . . .	64 P/6	32
Daramgarh, graphite . . . . .	64 P/3	220
Domaipali „ . . . . .	64 P/1	220
Marna „ . . . . .	64 P/2	220
<b>Santal Parganas—</b>		
Akasi (Panch Pahar), lead . . . . .	72 P/2	294
Asumi, calcareous tufa . . . . .	—	33
Bagmara, kaolin . . . . .	72 P/6	286
Bairuki, copper . . . . .	72 L/10	118
„ silver-lead . . . . .	„	294
Baramasia, mineral water . . . . .	72 P/10	377
Bargo, fire-clay . . . . .	72 P/6	146
Bhukhanda, kaolin . . . . .	72 P/7	286
Bhulgora, fire-clay . . . . .	72 P/5	147
Bhumka, mineral water . . . . .	72 P/8	377
Bindrabun, calcareous tufa . . . . .	72 O/12	33
Bodh Bandh, copper . . . . .	72 L/16	118
Bora Ghat, fire-clay . . . . .	72 O/8	147
Brahmini R., coal . . . . .	72 P/11	83
Burari, fire-clay . . . . .	72 P/5	147
Burhait, agate . . . . .	72 P/9	152
„ amethyst . . . . .	„	155

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—contd.</b>		
<b>Santal Parganas—contd.</b>		
Burio, flag-stone . . . . .	72 O/12	33
Chaparbhita, coal . . . . .	72 P/5	84
Chilgo, fire-clay . . . . .	72 P/6	147
Dhumabhita „ . . . . .	72 P/6	147
Dhumni „ . . . . .	72 P/5	147
Dodhani, kaolin . . . . .	72 P/7	286
Dubrajpur, coal . . . . .	72 P/7	84
Ganges R., glass-making sand . . . . .	72 O/16	186
Gilhurria, coal . . . . .	72 P/5	84
„ fire-clay . . . . .	„	147
Gugri, fire-clay . . . . .	72 P/6	147
Hura, coal . . . . .	72 P/5	84
„ fire-clay . . . . .	„	147
„ kaolin . . . . .	„	286
Jainti, coal . . . . .	72 L/12	84
Jharya (Jherwa) Pani, mineral water . . . . .	72 P/7	377
Jiajore, fire-clay . . . . .	72 P/5	147
Karanpur, kaolin . . . . .	72 P/7	286
Katangi „ . . . . .	72 P/7	286
Khari Pahar, kaolin . . . . .	—	285
„ „ ochre . . . . .	—	392
Khijaria, fire-clay . . . . .	72 P/8	147
Kundit Karaia, coal . . . . .	73 M/1	84
Lau-lau-dah (Sibpur), mineral water . . . . .	72 P/11	377
Lohandia, fire-clay . . . . .	72 O/8	147
„ kaolin . . . . .	„	285

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—contd.</b>		
<b>Santal Parganas—contd.</b>		
Mangal Hat, glass-making sand . . . . .	72 O/16	186
„ „ kaolin . . . . .	„	286
Mohwagarhi, calcareous tufa . . . . .	72 P/7	33
Narganjo, fire-clay . . . . .	72 P/7	147
Nunbil, mineral water . . . . .	72 P/4	377
Pachwara, coal . . . . .	72 P/6	84
Piaram, kaolin . . . . .	72 O/8	286
Pir Pahar, glass-making sand . . . . .	72 O/16	186
Rajabhita, calcareous tufa . . . . .	72 P/6	33
„ kaolin . . . . .	„	286
Rajmahal hills, basalt . . . . .	72 P	33
„ „ iron . . . . .	„	244
„ „ sandstone . . . . .	„	33
Rohri, fire-clay . . . . .	72 P/5	147
Sahajori, coal . . . . .	72 L/16	84
Sakduha, fire-clay . . . . .	72 P/11	147
Sankera hills, lead . . . . .	72 P/7	294
Simlong, fire-clay . . . . .	72 P/6	147
Simru „ „ . . . . .	72 O/8	147
Surwa „ „ . . . . .	72 P/7	147
Susumpani, mineral water . . . . .	72 P/8	377
Tapatpani „ „ . . . . .	72 P/8	377
Tat-loi (Tapnai), mineral water . . . . .	72 P/3	377
Telbhita, fire-clay . . . . .	72 P/5	147
Turi (Tiur) Pahar, lead . . . . .	72 L/15	294
Umbapani, fire-clay . . . . .	72 P/11	147

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—<i>contd.</i></b>		
<b>Shahabad—</b>		
Chuthan, ochre . . . . .	63 P/10	393
Durguti R., alum . . . . .	63 P/10	4
Kaimur range, sandstone . . . . .	—	33
Mandpa, ochre . . . . .	63 P/10	393
Margohi, limestone . . . . .	72 D/1	33
Phulmaria, alum . . . . .	63 P/14	4
Piteean, potstone . . . . .	—	458
Rohtasgarh, alum . . . . .	63 P/14	4
„ limestone . . . . .	„	33
„ lithographic stone . . . . .	„	310
„ sulphate of iron . . . . .	„	467
Sugia-Koh R., alum . . . . .	—	4
Sulya, iron . . . . .	63 P/9	244
Surki „ . . . . .	—	244
<b>Singhbhum, bismuth . . . . .</b>	..	23
„ slate . . . . .	„	33
„ sulphide ores . . . . .	„	472
Anandapur, gold . . . . .	73 F/3	195
Asantoria „ . . . . .	73 F/10	195
Buda hill, iron . . . . .	73 F/7	245
Chingijari „ . . . . .	73 F/10	245
Dhipa, gold . . . . .	73 F /3	195
Duarparam, copper . . . . .	73 F/9	119
Koel R., gold . . . . .	73 F/3	195
Leda hill, manganese . . . . .	73 F/7	321
Pahardiah, gold . . . . .	73 F/2	195

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—contd.</b>		
<b>Singhbhum—contd.</b>		
Pahardiah, silver-lead . . . . .	73 F/2	295
Pansira (Notu hill), iron . . . . .	73 F/7	245
Porahat, gold . . . . .	73 F/6	195
Sanjai R., „ . . . . .	73 F/6	195
Sausal „ . . . . .	73 F/6	196
Sukha R., „ . . . . .	73 F/7	196
Tendu, iron . . . . .	73 F/10	245
<b>(Dhalbhum)—</b>		
Belaipahari, potstone . . . . .	73 J/5	458
Bhairagora, copper . . . . .	73 J/11	119
Dari, potstone . . . . .	73 J/2	458
Domapal „ . . . . .	73 J/11	458
Gurha R., gold . . . . .	73 J/6	195
Hakigora, iron . . . . .	73 J/2	245
Kalimati, tungsten . . . . .	73 J/1	485
Kamerara, gold . . . . .	73 J/11	195
Kapargadi pass, gold . . . . .	73 J/6	195
Landu (Nadup), copper . . . . .	73 J/2	120
„ „ gold . . . . .	„	195
Laukisra, copper . . . . .	73 J/6	120
Matigara „ . . . . .	73 J/6	120
Moosalbali (≠ Mosalboni), apatite . . . . .	73 J/6	424
Narsinghpur, potstone . . . . .	73 J/6	457
Pathorgora, apatite . . . . .	73 J/6	424
Rajdoha, copper . . . . .	73 J/6	121
„ gold . . . . .	„	195

	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—contd.</b>		
<b>Singbhum (Dhalbhum)—contd.</b>		
Sakchi, iron . . . . .	73 J/1	242
Sidesher, potstone . . . . .	73 J/6	458
Tikri, potstone . . . . .	73 J/6	458
Tilai jhor, potstone . . . . .	73 J/2	458
Turamdih, iron . . . . .	73 J/2	245
(Kharsawan), ochre . . . . .	..	393
Kodomdiha, copper . . . . .	73 F/13	120
Lopso hill, corundum . . . . .	73 F/9	139
Regadih, copper . . . . .	73 F/9	121
Sonapet, gold . . . . .	73 F/9	196
(Kolhan), ochre . . . . .	..	393
Bistampur (Matagota), manganese . . . . .	73 F/15	320
Chaibasa, iron . . . . .	73 F/14	245
„ manganese . . . . .	„	320
Gitilpi, manganese . . . . .	73 F/14	320
Jogohatu, iron . . . . .	73 F/10	245
Kalenda, manganese . . . . .	73 F/15	321
Lagia, iron . . . . .	73 F/10	245
„ manganese . . . . .	„	321
Matkamhatu, manganese . . . . .	73 F/14	321
Sura pass, chromite . . . . .	73 F/10	63
Tekrasai, manganese . . . . .	73 F/14	321
Tutugutu, „ . . . . .	73 F/15	321
<b>(Saraikela)—</b>		
Dubrajpur, potstone . . . . .	73 J/2	458
Jamjura, copper . . . . .	73 J/2	120



	SHEET.	PAGE.
<b>BIHAR &amp; ORISSA—<i>contd.</i></b>		
<b>Singbhum (Saraikela)—<i>contd.</i></b>		
Koraikela, potstone . . . . .	73 F/10	458
Palakucha „ . . . . .	73 J/2	458
Talcher, coal . . . . .	..	84
„ iron . . . . .	..	243
Gopulpersad, coal . . . . .	73 H/1	85
Ouli R., gold . . . . .	73 C/16	196
Tikiria R., gold . . . . .	73 C/16	196
<b>BOMBAY—</b>		
<b>Ahmadabad—</b>		
Harsol, mineral water . . . . .	46 E/3	378
Ranpur, agate . . . . .	41 N/11	152
<b>Ahmadnagar—</b>		
Rasin, copper . . . . .	47 J/15	121
Sina R., opal . . . . .	47 N/8	175
<b>Baroda—</b>		
Achali, quartzite . . . . .	46 F/11	34
Bhadrali, gneiss . . . . .	46 F/12	34
Bhulvan, granite . . . . .	46 F/12	34
Harikua, marble . . . . .	46 F/12	34
Lacharas hill, quartzite . . . . .	46 F/12	34
Motipura, marble . . . . .	46 F/12	34
Sandara, marble . . . . .	46 F/12	34
Sandia (Kundia), siliceous breccia . . . . .	46 F/12	34
Sihadra, quartzite . . . . .	46 F/16	34
Songir, sandstone . . . . .	46 F/12	35

	SHEET.	PAGE.
<b>BOMBAY—contd.</b>		
<b>Baroda—contd.</b>		
Surajpur, slate . . . . .	46 F/11	35
Tandalja, felsite . . . . .	46 F/12	34
Virpur, granite . . . . .	46 A/14	34
<b>Belgaum—</b>		
Belvadi, gold . . . . .	48 I/11	196
Bhimgad, manganese . . . . .	48 I/6	321
Ganibail, granitoid gneiss . . . . .	48 I/10	35
Gokak Falls, alum . . . . .	47 L/16	4
Hongal, gold . . . . .	48 I/12	196
Khanapur, granitoid gneiss . . . . .	48 I/10	35
Manikeshri, manganese . . . . .	47 P/4	321
Murgod, gold . . . . .	48 I/13	196
Nagargali, manganese . . . . .	48 I/11	321
Nersa, „ . . . .	48 I/6	321
Talevadi, „ . . . .	48 I/6	321
Tawargatti, „ . . . .	48 I/11	322
<b>Bijapur—</b>		
Aiholi (Iwulee), sandstone . . . . .	47 P/16	35
Amingarh, iron . . . . .	47 P/16	246
Bagalkot, lithographic stone . . . . .	47 P/12	310
„ manganese . . . . .	„	322
Bassargi, iron . . . . .	48 M/1	246
Bijapur, basalt . . . . .	47 P/9	35
Bilgi, building stone . . . . .	47 P/11	35
Bisnal, iron . . . . .	47 P/7	246
Dhanur, hornblende—schist . . . . .	56 D/4	36

	SHEET.	PAGE.
<b>BOMBAY—contd.</b>		
<b>Bijapur—contd.</b>		
Gudur, sandstone . . . . .	48 M/13	35
Guludgud, gold . . . . .	47 P/16	197
Haligeri, flag-stone . . . . .	48 M/5	35
Hunugund, schist . . . . .	56 D/4	35
Ingleswara, manganese . . . . .	56 D/2	322
Kacherdawi (Khajjidoni), copper . . . . .	47 P/8	121
Kaladgi, limestone . . . . .	47 P/12	35
Lokapur, slate . . . . .	47 P/8	36
Mailleshwar, limestone . . . . .	56 D/7	35
Parvati, sandstone . . . . .	47 P/16	35
Silikeri, slate . . . . .	47 P/12	36
Sitadonga hill, ochre . . . . .	47 P/12	393
Talikot, lithographic stone . . . . .	56 D/7	310
„ salt . . . . .	„	439
„ slate . . . . .	„	36
<b>Broach—</b>		
Kawa, mineral water . . . . .	46 B/12	378
<b>Chota Udaipur—</b>		
Gabadia hills, mica . . . . .	46 J/3	366
Moriari (? Muthyari), iron . . . . .	46 F/15	248
Pani, manganese . . . . .	46 F/15	323
<b>Cutch, sandstone . . . . .</b>	..	36
Adesar, gypsum . . . . .	41 I/14	226
Adkui, gypsum . . . . .	41 I/11	226
Badargarh, gypsum . . . . .	41 I/11	226

	SHEET.	PAGE.
<b>BOMBAY—contd.</b>		
<b>Cutch—contd.</b>		
Bhuj, coal . . . . .	41 E/11	85
„ limestone . . . . .	„	36
Buchao, iron . . . . .	41 I/7	246
Chachera Kund, alum . . . . .	41 A/14	5
Charwar range, miliolite . . . . .	41 E/12	36
Chitrore, gypsum . . . . .	41 I/11	226
Dudhai, iron . . . . .	41 I/3	246
Lakhpat, ochre . . . . .	41 A/13	393
„ salt . . . . .	„	436
Mhurr, alum. . . . .	41 A/14	4
„ gypsum . . . . .	„	226
„ mineral water . . . . .	„	378
Patcham I., marble . . . . .	41 E/13	36
Raimalru hill, limestone . . . . .	41 E/9	30
Sisagadh, coal . . . . .	41 E/8	85
Trombow (Trambau), coal . . . . .	41 E/11	85
Umarsar, gypsum . . . . .	41 A/14	226
<b>Dharwar, potstone . . . . .</b>	..	458
Attikatti (Hutteekuttee), gold . . . . .	48 M/11	197
Chik Vadvati, manganese . . . . .	48 M/12	322
Dambal, gold . . . . .	48 M/15	197
Dhoni, copper . . . . .	48 M/11	121
„ gold . . . . .	„	197
„ limestone . . . . .	„	36
Gadag, chloritic schist . . . . .	48 M/11	36
Hamigi, manganese . . . . .	48 M/16	322

	SHEET.	PAGE.
<b>BOMBAY—contd.</b>		
<b>Dharwar—contd.</b>		
Hosur, gold . . . . .	48 M/11	197
Kabulayatkatti (Kabligatti), gold . . . . .	48 M/11	197
Kappatgod hills, copper. . . . .	48 M/11	121
„ „ gold . . . . .	„	197
„ „ tin . . . . .	„	477
Surtur, copper . . . . .	48 M/12	121
„ gold . . . . .	„	197
<b>(Sangli)—</b>		
Kelur, manganese . . . . .	48 M/16	322
Shirhatti, manganese . . . . .	48 M/12	323
<b>Idar—</b>		
Ahmadnagar, sandstone. . . . .	46 A/14	37
Dev Mori, asbestos . . . . .	46 E/6	16
„ „ magnesite . . . . .	„	312
„ „ steatite . . . . .	„	458
Ghanta, steatite . . . . .	46 E/6	459
Kokapur, magnesite . . . . .	46 E/6	312
Kundol, steatite . . . . .	46 E/6	459
Sabarmati R., monazite . . . . .	46 A	390
<b>Kaira—</b>		
Kapadvanj, agate . . . . .	46 E/4	152
Lasundara, mineral water . . . . .	46 F/1	378
Majam R., agate . . . . .	46 E/4	152
<b>Kathiawar—</b>		
<b>(Baroda)—</b>		
Amreli, basalt . . . . .	41 O/2	37

	SHEET.	PAGE.
<b>BOMBAY—contd.</b>		
<b>Kathiawar (Baroda)—contd.</b>		
Bardia, marble . . . . .	41 F/4	38
Damnagar, acidic trap . . . . .	41 O/10	37
Dhalkania, acidic trap . . . . .	41 O/10	37
Gaodka, basalt . . . . .	41 O/2	37
Kodinar, miliolite . . . . .	41 L/9	38
Kuranga, gypsum . . . . .	41 F/4	226
Pipalwa, marble . . . . .	41 O/4	38
Rajpura Bandar, limestone . . . . .	41 F/4	38
Rupavati, diorite . . . . .	41 O/4	37
Sakhpur, acidic trap . . . . .	41 O/10	37
Shedaya, limestone . . . . .	41 L/13	38
(Bhavnagar), gypsum . . . . .	..	226
<b>(Dhrangadra)—</b>		
Baoli, sandstone . . . . .	41 N/5	37
Dhrangadra, sandstone . . . . .	41 N/5	37
Kantrori, iron . . . . .	41 N/5	246
<b>(Gondal)—</b>		
Khirasra, marble . . . . .	41 K/5	37
Sajriali „ . . . . .	41 K/5	37
<b>(Junagarh)—</b>		
Banej-nes, copper . . . . .	41 K/16	122
„ lead . . . . .	„	295
Sourekha R., gold . . . . .	41 K/10	198
Tulsi Sham, mineral water . . . . .	41 O/4	378
<b>(Lakhtar)—</b>		
Than, coal . . . . .	41 N/2	85

	SHEET.	PAGE.
<b>BOMBAY—contd.</b>		
<b>Kathiawar—contd.</b>		
(Limbdī), borax . . . . .	..	24
(Morvi)—		
Khijaria, agate . . . . .	41 J/9	153
Tankara, jasper . . . . .	41 J/13	174
„ rock-crystal . . . . .	41 J/13	176
(Navanagar) miliolite . . . . .	..	38
Alech hills, felsite . . . . .	41 K/1	38
Badanpur, moss agate . . . . .	41 J/9	153
Baolidar, onyx . . . . .	41 J/4	175
Bhatia, gypsum . . . . .	41 P/8	226
„ iron . . . . .	„	247
Bhudli, copper . . . . .	—	122
Bori, onyx . . . . .	41 J/4	175
Chequo Dhar, iron . . . . .	41 G/13	247
Habardi, iron . . . . .	41 F/8	247
„ laterite (habardilite) . . . . .	„	38
Hariawar, ochre . . . . .	41 F/8	393
Jam Jodhpur, iron . . . . .	41 K/1	247
Jivapur, moss agate . . . . .	41 J/9	153
Khakhra, moss agate . . . . .	41 J/7	153
Khokhra Dhar, iron . . . . .	41 G/5	247
Khokhri, onyx . . . . .	41 J/7	175
Latipur, moss agate . . . . .	41 J/10	153
Maha Devia, iron . . . . .	41 F/8	247
Nandana, gypsum . . . . .	41 F/8	226
Narmana, onyx . . . . .	41 J/4	175
Navanagar, copper . . . . .	41 J/3	122

	SHEET.	PAGE.
<b>BOMBAY—contd.</b>		
<b>Kathiawar (Navanagar)—contd.</b>		
Otala, moss agate . . . . .	41 J/10	153
Pindara, limestone (pindaralite) . . . . .	41 F/8	38
Ramwara R., laterite (ramwaralite) . . . . .	41 F/4	38
Ran, gypsum . . . . .	41 F/8	226
Raningspur, palagonite . . . . .	41 N/4	38
Sambelia Bet, iron . . . . .	41 F/7	247
Tamba Talao „ . . . . .	41 F/8	247
Thoriali, moss agate . . . . .	41 J/10	153
Timbri „ „ . . . . .	41 J/10	153
Veratia, agate . . . . .	41 J/7	153
Vijarkhi, onyx . . . . .	41 J/3	175
Virpur, gypsum . . . . .	41 F/7	226
<b>(Porbandar)—</b>		
Bakharla, iron . . . . .	41 G/10	246
Barda hills, felsite . . . . .	41 G/10	38
„ „ miliolite . . . . .	„	37
Ranawao, iron . . . . .	41 G/10	246
Ranpur, iron . . . . .	41 G/9	246
„ miliolite . . . . .	„	37
<b>Kolaba—</b>		
Pali, mineral water . . . . .	47 F/2	378
Sapa (Savi), mineral water . . . . .	47 F/8	378
<b>Narukot—</b>		
Dhola Sodur hill, mica . . . . .	46 F/11	366
Jambughoda, iron . . . . .	46 F/11	247
„ tin . . . . .	„	477



	SHEET.	PAGE.
<b>BOMBAY—contd.</b>		
<b>Narukot—contd.</b>		
Jhuban (? Jaban), lead . . . . .	46 F/11	295
Jothvad, apatite . . . . .	46 F/11	425
„ manganese . . . . .	„	324
Khandivav Lake, lead . . . . .	46 F/11	295
Narukot, iron . . . . .	46 F/11	248
<b>North Kanara—</b>		
Supa, manganese . . . . .	48 I/11	323
<b>Palanpur—</b>		
Hosainpura (Hoshanpur), gadolinite . . . . .	45 D/11	431
„ „ manganese . . . . .	„	323
„ „ tin . . . . .	„	477
Rohu, manganese . . . . .	45 D/11	323
<b>Panch Mahals—</b>		
Sivrajpur, manganese . . . . .	46 F/11	323
Tuwa (Tui) mineral water . . . . .	46 F/9	379
<b>Poona—</b>		
Loni Kalbhar, soda . . . . .	47 J/3	453
Sirur, soda . . . . .	47 J/5	453
<b>Rajpipla—</b>		
Bardaria hill, trachyte . . . . .	46 G/6	39
Bhilod, gypsum . . . . .	46 G/2	226
Damlai, kaolin . . . . .	46 G/2	286
Deva R., sandstone . . . . .	—	39
Dodvada, gypsum . . . . .	46 G/2	227
Dungri, iron . . . . .	46 G/2	248
Gora, marble . . . . .	46 G/2	39

	SHEET.	PAGE.
<b>BOMBAY—contd.</b>		
<b>Rajpipla—contd.</b>		
Karia hill, trachyte . . . . .	46 G/6	39
Limodra, agate . . . . .	46 G/2	153
„ iron . . . . .	„	248
„ manganese . . . . .	„	324
Mokhadi, marble . . . . .	46 G/9	39
Mota Amba, tuff . . . . .	46 G/9	39
Padvania, ochre . . . . .	46 G/2	393
Rajpipla, tuff . . . . .	46 G/9	39
Ratanpur, agate . . . . .	46 G/2	153
Sakva, sandstone . . . . .	46 G/9	39
Samaria, tuff . . . . .	46 G/9	39
Todakhail R., marble . . . . .	46 G/13	39
Vanji, marble . . . . .	46 G/13	39
Vasna, bauxite . . . . .	46 G/2	22
Zulta Amda, marble . . . . .	46 G/13	39
<b>Ratnagiri—</b>		
Arauli, mineral water . . . . .	47 G/11	379
Asgani, potstone . . . . .	47 H/12	459
Malvan, iron . . . . .	47 H/8	247
Mat, mineral water . . . . .	47 H/5	379
Rairi (Reri), iron . . . . .	48 E/10	247
„ „ manganese . . . . .	„	323
Rajapur, mineral water . . . . .	47 H/10	379
Ratnagiri, lignite . . . . .	47 H/5	307
Sangameshwar, mineral water . . . . .	47 G/12	379
Tural (Rajwadi), mineral water . . . . .	47 G/12	379

	SHEET.	PAGE.
<b>BOMBAY—contd.</b>		
<b>Ratnagiri—contd.</b>		
Unari, mineral water . . . . .	47 G/6	379
Vingorla, copper . . . . .	48 E/9	122
<b>(Savantvadi)—</b>		
Banda, iron . . . . .	48 E/13	247
Savantvadi, iron . . . . .	48 E/13	247
<b>Satara—</b>		
Kas, manganese . . . . .	47 G/14	324
Khanapur, manganese . . . . .	47 K/11	324
Mahableshwar, bauxite . . . . .	47 G/9	21
„ iron . . . . .	„	248
„ manganese . . . . .	„	324
Wai, manganese . . . . .	47 G/13	324
<b>Sind—</b>		
Hyderabad, fullers' earth . . . . .	40 C/7	150
<b>(Karachi)—</b>		
Bandh Vera, iron . . . . .	40 C/2	248
Bill, alum . . . . .	35 O/6	5
Ghizri Bandar, sulphur . . . . .	35 F/1	472
Jain Pir, mineral water . . . . .	40 C/4	379
Jhirak, limestone . . . . .	40 C/4	39
Karachi „ . . . . .	35 L/13	39
Kotri, iron . . . . .	40 C/7	248
Lainyan, coal . . . . .	40 C/2	85
„ iron . . . . .	„	248
Laki, mineral water . . . . .	35 N/15	379
„ sulphur . . . . .	„	472

	SHEET.	PAGE.
<b>BOMBAY—<i>contd.</i></b>		
<b>Sind—<i>contd.</i></b>		
<b>(Karachi)—<i>contd.</i></b>		
Laki range, fullers' earth . . . . .	35 N/15	150
Manga (Mugger) Pir, mineral water . . . . .	35 P/1	379
Ranikot, alum . . . . .	35 O/13	5
Thano-Bule-Khan, celestite . . . . .	35 O/15	469
Wagodur, mineral water . . . . .	35 P/1	380
<b>(Larkhana)—</b>		
Gaj R., gypsum . . . . .	35 N/5	227
Maki Nai, alum . . . . .	35 M/8	5
Pith (Ghazipur), mineral water . . . . .	35 N/7	380
Sehwan, mineral water . . . . .	35 N/15	380
Shah Hassan, alum . . . . .	35 N/11	5
<b>(Sukkur)—</b>		
Sukkur, limestone . . . . .	40 A/14	39
„ petroleum . . . . .	„	404
<b>Surat—</b>		
Anaval (Devaka Unei), mineral water . . . . .	46 H/5	380
Tarkeshwar, bauxite . . . . .	46 G/3	21
„ limestone . . . . .	„	40
<b>Thana, basalt</b> . . . . .	..	40
Kokner, mineral water . . . . .	47 A/14	380
Thal Ghat, basalt . . . . .	47 E/6	34
Satiwali, mineral water . . . . .	47 A/13	380
Vesava I., limestone . . . . .	47 A/16	40
Vizrabhai, mineral water . . . . .	47 E/3	380

	SHEET.	PAGE.
<b>BURMA—</b>		
<b>Akyab—</b>		
Baranga Is., petroleum . . . . .	85 E/1	406
Krinkhwaimau, petroleum . . . . .	84 D/15	406
Nataran, petroleum . . . . .	84 D/13	406
<b>Amherst—</b>		
Ataran R., antimony . . . . .	94 H/15	11
„ bismuth . . . . .	„	23
„ fire-clay . . . . .	„	148
„ iron . . . . .	„	249
„ mineral water . . . . .	„	380
„ sulphate of iron . . . . .	„	467
Gyaing R., fire-clay . . . . .	94 H/14	148
„ iron . . . . .	„	249
„ manganese . . . . .	„	325
Houndran (? Haung-tha-raw) R., lead . . . . .	95 I/10	295
Kyiek Myram, copper . . . . .	—	122
Lokka Taung, antimony . . . . .	94 H/12	11
Megathat R., copper . . . . .	95 I/7	122
Maulmein, fire-clay . . . . .	94 H/11	147
„ lead . . . . .	„	295
„ limestone . . . . .	„	40
Natinoo, mineral water . . . . .	94 H/11	381
Sienli „ „ . . . . .	94 H/11	381
Zimé (Zami) R., antimony . . . . .	95 I/6	11
„ „ „ lead . . . . .	„	295
<b>Bassein—</b>		
Banmi, limestone . . . . .	85 K/11	40

	SHEET.	PAGE.
<b>BURMA—contd.</b>		
<b>Bassein—contd.</b>		
Bassein R., gold . . . . .	85 L/9	193
Korangyi I., limestone . . . . .	85 L/6	40
Thamandewa, „ . . . .	85 L/11	40
<b>Bhamo—</b>		
Mithwé, coal . . . . .	92 D/16	85
Molé Kyaung, gold . . . . .	92 H/3	198
Myothat, gold . . . . .	92 H/7	198
Ponsee (Ponshi), lead . . . . .	92 H/11	295
Taping R., gold . . . . .	92 H/7	198
<b>Chindwin (Lower)—</b>		
Alón, gold . . . . .	84 N/4	198
Bawdibin, petroleum . . . . .	84 J/10	408
Kani, gold . . . . .	84 J/15	198
„ platinum . . . . .	„	427
Letpadaung hill, copper . . . . .	84 N/4	122
Taungdwin Kyaung, petroleum . . . . .	84 J/6	408
Thazi, gold . . . . .	84 N/8	198
<b>Chindwin (Upper)—</b>		
Edi R., salt . . . . .	92 B/7	436
Gyogon, gold . . . . .	83 L/12	199
Helaw, gold . . . . .	83 L/12	199
Hukawng valley, amber. . . . .	92 B	9
„ „ gold . . . . .	„	199
„ „ platinum . . . . .	„	427
Indin, petroleum . . . . .	84 I/4	408
Kalewa, coal . . . . .	81 I/8	86

	SHEET.	PAGE.
<b>BURMA—contd.</b>		
<b>Chindwin (Upper)—contd.</b>		
Kapdup R., gold . . . . .	92 B/15	199
Khaung-ngo, gold . . . . .	83 P/1	199
Kindat, lignite . . . . .	84 I/6	307
Kyobin, gold . . . . .	83 P/5	199
Maglung (Yu) R., salt . . . . .	83 L/8	436
Mainghkwan, amber . . . . .	92 B/7	9
Maku R., coal . . . . .	84 I	86
Mekkalek, gold . . . . .	—	200
Namkwan R., gold . . . . .	92 B/7	199
Nam-won-kôk R., salt . . . . .	92 B	436
Nantahin R., coal . . . . .	84 I	86
Ningthee (Chindwin) R., gold . . . . .	83 L	198
Peluswa R., coal . . . . .	84 I	86
Telong R., „ . . . . .	84 I	86
Uyu R., gold . . . . .	83 P	199
Yenan, petroleum . . . . .	84 I/5	408
Yenatha „ . . . . .	84 I/4	408
Ywatha, gold . . . . .	83 L/12	199
<b>Henzada, nickel . . . . .</b>	..	391
„ salt . . . . .	..	437
Endeingôn, kaolin . . . . .	85 O/1	287
Hlemank, coal . . . . .	85 O/1	86
Kyibin, graphite . . . . .	85 K/14	220
Kywezin, coal . . . . .	85 O/1	86
Posugyi „ . . . . .	85 N/4	86
Sahdwingyi, salt . . . . .	85 N/4	437

	SHEET.	PAGE.
<b>BURMA—contd.</b>		
<b>Henzada—contd.</b>		
Wadawkwin, graphite . . . . .	85 O/2	220
Yenandaung, petroleum . . . . .	85 N/4	408
<b>Insein—</b>		
Engsein (Insein), manganese . . . . .	94 D/1	325
<b>Karenni—</b>		
Keh-daung (Mawchi), tin . . . . .	94 F/1	480
„ „ tungsten . . . . .	„	485
Kyai Kyaung, mineral water . . . . .	—	381
Myet-nan-Kyaung, gold . . . . .	—	200
Namon, tourmaline . . . . .	94 E/7	183
Ye-bu, mineral water . . . . .	—	381
<b>Katha (Wuntho)—</b>		
Banmauk, gold . . . . .	83 P/15	201
Kaydwin, silver-lead . . . . .	83 P/12	296
Kyaukpazat, gold . . . . .	83 P/16	200
Maingthon hill, salt . . . . .	83 P/12	436
Mawkwin, lead . . . . .	83 P/12	296
Moza R., gold . . . . .	92 D/4	200
„ platinum . . . . .	„	427
Pinlebu, coal . . . . .	83 P/8	87
Yuyinbyet coal . . . . .	83 P/8	87
<b>Kyaukpyu—</b>		
Cap I., coal . . . . .	85 E/7	87
Cheduba I., coal . . . . .	85 F	87
„ petroleum . . . . .	„	406
Hpa-aing, steatite . . . . .	84 L/7	459



	SHEET.	PAGE.
<b>BURMA—<i>contd.</i></b>		
<b>Kyaukpyu—<i>contd.</i></b>		
Kyaukpyauk, petroleum . . . . .	85 E/11	407
Ledaung, petroleum . . . . .	85 E/12	407
Minbyin (Yenandaung), petroleum . . . . .	85 E/12	407
Myingadé hill, steatite . . . . .	—	459
Pallang Roa, coal . . . . .	85 F/10	87
Ramri I., coal . . . . .	85 E	87
„ iron . . . . .	„	249
„ limestone . . . . .	„	41
„ petroleum . . . . .	„	406
Round I., copper . . . . .	85 F/14	122
Synkyaung, coal . . . . .	85 E/11	87
Tsetama, coal . . . . .	85 F/13	87
Yanthek, limestone . . . . .	85 F/16	41
<b>Kyauksé—</b>		
Kyauksé, marble . . . . .	93 C/2	41
Myogyi, gold . . . . .	93 C/6	201
<b>Magwé—</b>		
Berné, petroleum . . . . .	84 L/15	411
Khodaung, petroleum . . . . .	84 L/15	411
Kyundaw, petroleum . . . . .	85 M/1	408
Migyaungé, petroleum . . . . .	85 M/1	408
Ondwe, petroleum . . . . .	84 P/4	409
Twingon, petroleum . . . . .	82 L/15	411
Wetchok, petroleum . . . . .	84 P/3	409
Yedwet, petroleum . . . . .	84 P/2	409

	SHEET.	PAGE.
<b>BURMA—contd.</b>		
<b>Magwé—contd.</b>		
Yenangyaung, manganese . . . . .	84 L/15	325
„ petroleum . . . . .	„	409
<b>Mandalay—</b>		
Sagyin, marble . . . . .	93 B/3	41
„ ruby . . . . .	„	178
Singaung (Zegôn), iron . . . . .	93 C/5	249
Tonbô, limestone . . . . .	93 C/1	41
Twinngé, iron . . . . .	93 C/5	249
Wetwin, coal . . . . .	93 B/12	90
„ iron . . . . .	„	249
Zebingyi, limestone . . . . .	93 C/5	41
<b>Meiktila—</b>		
Lebya, petroleum . . . . .	84 O/12	413
Legauing, coal . . . . .	93 D/9	90
Pyinnyaung, lead . . . . .	93 D/5	298
Titpalwigôn, coal . . . . .	93 D/9	90
<b>Mergui—</b>		
A-tong-wo, coal . . . . .	96 I/15	88
Banhuni, tin . . . . .	96 J/10	480
Bokpyin, tin . . . . .	96 I/16	480
Ch'hando (Kyando) tin . . . . .	95 K/11	480
Davies I., tin . . . . .	96 K/1	483
Gna I., manganese . . . . .	95 L/7	325
Hangpru, tin . . . . .	96 I/16	481
Hesamkong, tin . . . . .	96 M/2	481
Horsborough I., gold . . . . .	96 G/16	201

	SHEET.	PAGE.
<b>BURMA—<i>contd.</i></b>		
<b>Mergui—<i>contd.</i></b>		
Kahan hill, tin . . . . .	95 L/16	481
Kala-khuing I., iron . . . . .	96 I/9	249
Kala-Kyauk I., copper . . . . .	95 L/11	122
Kamapying, coal . . . . .	95 P/3	88
Karathuri, tin . . . . .	96 J/13	481
Kings' I., tin . . . . .	95 L/6	483
Kissering (Kit-tha-yin) I. tin . . . . .	96 I/6	483
Kumong, manganese . . . . .	96 J/12	325
Kyaung-kapra, tin . . . . .	96 J/13	481
Kyaung-ta-naung, tin . . . . .	96 J/9	481
Lamaing R., gold . . . . .	—	201
Lampei (Sullivan) I., copper . . . . .	96 J/1	122
Lenya R., coal . . . . .	96 I/15	88
„ tin . . . . .	„	481
Loungdoungin R., tungsten . . . . .	95 P/4	485
Maingay's I., silver-lead . . . . .	95 L/6	296
Maliwun, tin . . . . .	96 J/12	478, 481
Maoin (Meaing )I., iron . . . . .	95 L/7	249
Mazaw, tin . . . . .	95 L/15	482
Mergui, tin . . . . .	95 L/11	482
Migyaung Kyaung, tin . . . . .	96 I/11	482
Palauk, mineral water . . . . .	95 K/11	381
Russel I., gold . . . . .	—	201
Sadien, tin . . . . .	96 I/15	482
Tagu, tin . . . . .	95 P/3	482
Tenasserim R., coal . . . . .	95 P/4	87

	SHEET.	PAGE.
<b>BURMA—<i>contd.</i></b>		
<b>Mergui—<i>contd.</i></b>		
Tenasserim R., gold . . . . .	95 P/4	201
„ kaolin . . . . .	„	287
Tendau (Ta-the-na), coal . . . . .	95 P/3	87
„ „ tin . . . . .	„	482
Thabalik, tin . . . . .	95 P/4	482
Thagu R., manganese . . . . .	—	325
Tharapôn, tin . . . . .	95 L/16	482
Therabwin, graphite . . . . .	95 P/3	220
„ iron . . . . .	„	250
„ manganese . . . . .	„	325
To-twé, tin . . . . .	96 I/12	482
Tsingkoon, coal . . . . .	95 P/4	87
White Pigeon I., iron . . . . .	—	249
Yamôn, tin . . . . .	95 L/12	483
„ tungsten . . . . .	„	485
Ye-ngan, tin. . . . .	96 I/15	483
<b>Minbu—</b>		
Kyet-u-bok, petroleum . . . . .	85 I/9	414
Minbu, petroleum . . . . .	84 L/16	413
Ngahlaingdwin, petroleum . . . . .	84 L/6	414
Ngapé, petroleum . . . . .	84 L/8	414
Peinhnebin, petroleum . . . . .	84 L/12	414
Penlan, steatite . . . . .	85 I/5	460
<b>Mōngmit (Momeik), ruby . . . . .</b>	„	178
Maingnin, tourmaline . . . . .	93 A/16	183

	SHEET.	PAGE.
<b>BURMA—<i>contd.</i></b>		
<b>Myingyan—</b>		
Gwegyô, petroleum . . . . .	84 P/1	414
Kabat (Seiktein), manganese . . . . .	84 O/8	325
„ „ petroleum . . . . .	„	415
„ „ sulphate of iron . . . . .	„	467
Ngashandaung, petroleum . . . . .	84 P/2	415
Pagan, petroleum . . . . .	84 K/16	415
Panbé, ochre . . . . .	84 P/1	393
Payagyigôn, petroleum . . . . .	84 P/2	415
Popa (Puppa) hill, iron . . . . .	84 P/1	250
Sagyin, salt . . . . .	84 P/5	437
Singu, petroleum . . . . .	84 L/13	415
Taungtha hill, petroleum . . . . .	84 O/7	416
Tetma, petroleum . . . . .	84 L/13	415
Welaung, petroleum . . . . .	84 O/8	416
<b>Myitkyina—</b>		
Hweka, iron . . . . .	92 C/3	250
„ jadeite . . . . .	„	282
Indaw R., mica . . . . .	92 C/7	367
Irrawaddy R., gold . . . . .	92 G/6	201
„ platinum . . . . .	„	427
Malikha, gold . . . . .	92 G/6	201
Mamôn, jadeite . . . . .	92 C/6	282
Manwé, ruby . . . . .	92 C/11	179
Naniazeik, ruby . . . . .	92 C/10	179
'N Maikha, gold . . . . .	92 G/10	201
Pungin Kha, spinel . . . . .	92 G/5	183

	SHEET.	PAGE.
<b>BURMA—contd.</b>		
<b>Myitkyina—contd.</b>		
Supya Kyaung, mineral water . . . . .	—	381
Talang, lignite . . . . .	92 G/5	307
Tammaw, chromite . . . . .	92 C/2	63
„ jadeite . . . . .	„	281
Uru (Uyu) R., iron . . . . .	92 C/3	250
Watu, spinel . . . . .	92 G/6	183
<b>Pakokku—</b>		
Chaungzongyi, gold . . . . .	84 K/13	201
Kyaukswe, petroleum . . . . .	84 K/4	416
Kyaukwet, petroleum . . . . .	84 K/10	416
Kyin, petroleum . . . . .	84 K/6	416
Kyun Kyaung, amber . . . . .	84 K/16	10
Letpanhla, coal . . . . .	84 K/7	89
Man, petroleum . . . . .	84 K/7	416
Myaing, petroleum . . . . .	84 K/14	416
Sabé, petroleum . . . . .	84 K/15	417
Shinmadaung, petroleum . . . . .	84 O/2	416
Sawin, petroleum . . . . .	84 K/10	416
Taux, coal . . . . .	84 K/7	89
Yaw R., coal . . . . .	84 K/7	88
Yebyu, petroleum . . . . .	84 K/6	416
Yenangyat, petroleum . . . . .	84 K/16	416
<b>Prome, iron . . . . .</b>	..	250
„ salt . . . . .	..	437
Namayan, petroleum . . . . .	85 N/1	418
Padaung (Kayinzu), petroleum . . . . .	85 N/2	418

	SHEET.	PAGE.
<b>BURMA—contd.</b>		
<b>Prome—contd.</b>		
Paukkaung, petroleum . . . . .	85 N/9	418
Shinbaian hill, steatite . . . . .	85 J/13	460
Taungbogyi, petroleum . . . . .	85 N/1	418
Ziaing (Thingan), petroleum . . . . .	85 N/1	418
<b>Ruby Mines—</b>		
Kyatpyin, ruby, . . . . .	93 B/5	178
Kyaukgyi, graphite . . . . .	93 B/1	221
Mogók, apatite . . . . .	93 B/9	156
„ marble . . . . .	„	41
„ ruby . . . . .	„	179
„ sapphire . . . . .	„	181
„ spinel . . . . .	„	183
„ tourmaline . . . . .	„	184
Shwenyaungbin, ruby . . . . .	93 B/5	179
Thabeikkyin, marble . . . . .	93 B/1	41
Wabyudaung, graphite . . . . .	93 B/1	220
Ye-nya-u, mica . . . . .	93 B/1	366
<b>Sagaing, asbestos . . . . .</b>	„	16
„ manganese . . . . .	„	325
Yega, copper . . . . .	84 O/13	122
„ salt . . . . .	„	437
<b>Salween—</b>		
Mizine, silver-lead . . . . .	94 G/11	296
Teetalay (Titalet) hill, lead . . . . .	94 G/6	296
Teetameelay (? Yomakyo) hill, silver-lead . . . . .	94 F/4	296
Yetagôn, manganese . . . . .	94 G/15	325

	SHEET.	PAGE.
<b>BURMA—contd.</b>		
<b>Salween—contd.</b>		
Yunzalin R., alum . . . . .	94 G	5
„ copper . . . . .	„	123
<b>Sandoway—</b>		
Kingtelli (Kyintali), lignite . . . . .	85 J/8	307
Sandoway, steatite . . . . .	85 J/7	460
<b>Shan States (Northern), mercury . . . . .</b>	..	364
<b>(Hsipaw)—</b>		
Bawgyo (Maw-hkeo), salt . . . . .	93 F/2	437
„ „ sulphate of soda . . . . .	„	468
Hsipaw, sandstone . . . . .	93 F/6	42
Hsum Hsai, antimony . . . . .	93 B/11	12
Mong-ting, coal . . . . .	93 F/13	90
Namma, coal . . . . .	93 F/14	90
Namon, mineral water . . . . .	93 F/3	381
Namsaw, lead . . . . .	93 B/14	297
Padaukpin, marble . . . . .	93 B/12	41
<b>(Möng-Long)—</b>		
Hwe-gna-sang, gold . . . . .	93 B/6	202
Kungwo, gold . . . . .	93 B/6	202
Letpandaw, copper . . . . .	93 B/11	123
Loi Sar, gold . . . . .	93 B/6	202
Nampai R., tourmaline . . . . .	93 B/9	184
<b>(Möng Tung), gold . . . . .</b>	..	202
Man Hpwe, lead . . . . .	93 F/16	297



	SHEET.	PAGE.
<b>BURMA—contd.</b>		
<b>Shan States (Northern)—</b>		
<b>(North Hsenwi)—</b>		
Lashio, coal . . . . .	93 F/13	89
" mineral water . . . . .	"	381
<b>(South Hsenwi)—</b>		
Man Sang, coal . . . . .	93 F/15	90
Man-so-lé, coal . . . . .	93 J/2	90
Namma, gold . . . . .	93 J/5	202
<b>(Tawng Peng)—</b>		
Bawdwin, barytes . . . . .	93 E/8	18
" copper . . . . .	"	123
" silver-lead . . . . .	"	296
" zinc . . . . .	"	297, 488
Hungwé, pyrites . . . . .	93 E/4	473
Loi Mi, copper . . . . .	93 E/8	123
Man Pat, pyrites . . . . .	93 E/4	473
Nam Hsan, antimony . . . . .	93 F/1	12
<b>Shan States (Southern)—</b>		
<b>(Kehsi Mansam)—</b>		
Keshi Mansam, mineral water . . . . .	93 G/13	381
Loi Twang, gold . . . . .	93 G/9	202
" iron . . . . .	"	250
<b>(Kengtung)—</b>		
Mong Ping, mineral water . . . . .	93 O/3	381
Waihang, mineral water . . . . .	93 K/16	381
(Möng Küng), gold . . . . .	"	202
<b>(Myelat)—</b>		
Bwelôn, silver-lead . . . . .	93 D/13	297

	SHEET.	PAGE.
<b>BURMA—contd.</b>		
<b>Shan States (Southern)—</b>		
<b>(Myelet)—contd.</b>		
Dwinzu, silver-lead . . . . .	93 D/13	297
Ganaingya, copper . . . . .	93 C/12	124
Kalaw, tungsten . . . . .	93 D/10	487
Kwe-ma-sa, copper . . . . .	93 D/10	124
Magwé, copper . . . . .	93 D/10	124
„ gold . . . . .	„	203
Mawstün (Bawzain), pyrites . . . . .	93 D/13	473
„ „ silver-lead . . . . .	„	297
Myinkyardo, lead . . . . .	93 D/9	298
Mam Tôk, saltpetre . . . . .	94 A/13	450
Nangôn, lignite . . . . .	93 D/9	307
Nga (Ngotko yaygi), coal . . . . .	93 D/9	91
Nyaungya, tungsten . . . . .	93 C/8	487
Panlaung R., coal . . . . .	93 C/8	91
Po-pyu, coal . . . . .	93 D/10	91
Taunglebyin, copper . . . . .	93 D/6	123
„ gold . . . . .	„	203
Yataung hill, copper . . . . .	93 D/9	123
Yebok, sulphur . . . . .	93 D/9	473
<b>(Yawnghwe)—</b>		
Kyauktat (Kyawk Htap), copper . . . . .	93 D/13	123
„ „ „ silver lead . . . . .	„	297
Thygyit (Hsikip), lignite . . . . .	93 D/14	307
Shwebo, saltpetre . . . . .	..	450
Halin, salt . . . . .	84 N/15	438
Kabwet, coal . . . . .	84 N/14	91

	SHEET.	PAGE.
<b>BURMA—contd.</b>		
<b>Shwebo—contd.</b>		
Ketzubin, coal . . . . .	84 N/14	91
Kibiung R., coal . . . . .	84 N/13	91
„ gold . . . . .	„	203
Kyunhla, petroleum . . . . .	84 M/7	418
Letkobin, coal . . . . .	84 N/14	91
Mantha, amber . . . . .	84 N/13	10
Ponnah R., gold . . . . .	84 N/13	203
Shimpagah (? Shinmaga), salt . . . . .	84 N/15	438
Tembiung, coal . . . . .	84 N/13	91
Thingadaw, coal . . . . .	84 N/13	91
„ gold . . . . .	„	203
<b>Tavoy, antimony . . . . .</b>	..	12
„ columbite . . . . .	..	430
„ molybdenum . . . . .	..	389
„ zinc . . . . .	..	489
Byauk Kyaung, tungsten . . . . .	95 J/3	486
Dzin Ba Kyaung, gold . . . . .	95 J/2	203
Eng-bein-byin, (Yebu-san), mineral water . . . . .	95 J/2	382
Heinda R., tin . . . . .	95 J/8	483
Heindu R., tin . . . . .	95 J/8	483
Henzai (Heinzé), cobalt . . . . .	95 F/14	112
„ „ gold . . . . .	„	203
„ „ platinum . . . . .	„	427
„ „ tin . . . . .	„	483
Hermyingyi (Hamyngyi), tin . . . . .	95 J/8	484
Im-Ba-Kyaung, gold . . . . .	95 J/1	203

	SHEET.	PAGE.
<b>BURMA—<i>contd.</i></b>		
<b>Tavoy—<i>contd.</i></b>		
Kalliaung (? Ka-lein-aung), ochre . . . . .	95 J/2	394
Kalonta Kyaung, tin . . . . .	95 J/7	484
„ „ tungsten . . . . .	„	486
Laukyen (Laukchan), mineral water . . . . .	95 J/8	382
Maungmeshaung, tin . . . . .	95 J/4	483
Myittha, alum . . . . .	95 J/12	6
„ mineral water . . . . .	„	382
„ tin . . . . .	„	483
Ongbingwin, tin . . . . .	95 F/14	484
Pa Kyaung, tungsten . . . . .	95 J/2	486
Pai, mineral water . . . . .	95 K/11	382
Sanchi R., tungsten . . . . .	95 J/8	485
Tavoy, iron . . . . .	95 J/4	250
Thangazôn, tungsten . . . . .	95 J/8	486
Thingadôn, „ . . . . .	95 J/8	486
Wagôn, tin . . . . .	95 J/8	484
<b>Tharrawaddy—</b>		
Shwegyaing, gold . . . . .	85 N/8	202
<b>Thaton, tin . . . . .</b>	..	484
„ tungsten . . . . .	..	487
Botaung hills, copper . . . . .	—	123
Kalagauk I., granitoid gneiss . . . . .	94 H	42
Pagah range, copper . . . . .	94 G	122
„ „ silver-lead . . . . .	„	295
Quangdé (Quangadu), antimony . . . . .	94 H/10	11
Thaungyin R., manganese . . . . .	94 G	324

	SHEET.	PAGE.
<b>BURMA—<i>contd.</i></b>		
Thayetmyo, salt . . . . .	..	437
Aukmanein, petroleum . . . . .	85 I/16	418
Bambyin „ . . . . .	85 M/3	418
Kama „ . . . . .	85 M/4	419
Kyauk-kale, coal . . . . .	85 I/11	92
Kyawdo, petroleum . . . . .	85 I/14	419
Linga „ . . . . .	85 I/14	419
Mindegyi „ . . . . .	85 I/13	419
Monat Kon „ . . . . .	85 M/1	419
Padaukpin „ . . . . .	85 M/3	419
Pyalo „ . . . . .	85 M/4	419
Sinmadaung „ . . . . .	85 M/1	419
Thabyemyaung (Thetkemyaung), petroleum . . . . .	85 I/13	419
Thayetmyo, coal . . . . .	85 M/3	92
„ limestone . . . . .	„	42
Yegubwet, petroleum . . . . .	85 I/9	419
Yenanman „ . . . . .	85 I/13	419
Toungoo, manganese . . . . .	..	325
Kanni R., graphite . . . . .	—	221
Shanlebyin, petroleum . . . . .	94 A/11	419
Shwegyin, gold . . . . .	94 C/13	203
Thanzeik, iron . . . . .	94 B/16	251
Toungoo, sandstone . . . . .	94 B/5	42
Yondaing, iron . . . . .	94 B/16	251
<b>Yamethin—</b>		
Mt. Pima, silver-lead . . . . .	93 D/6	298

	SHEET.	PAGE.
<b>CENTRAL INDIA AGENCY—</b>		
<b>Bhopal—</b>		
Kanugaon, manganese . . . . .	55 E/7	326
Bljavar, iron . . . . .	..	251
Simra, diamond . . . . .	63 D/1	162
<b>Charkari—</b>		
Bajaria, diamond . . . . .	63 D/6	162
Khameria „ . . . . .	63 D/5	162
Patti „ . . . . .	63 D/5	162
Ranipur „ . . . . .	63 D/5	162
<b>Chobpur—</b>		
Dia, diamond . . . . .	63 D/9	162
Jhanda „ . . . . .	63 D/9	162
Seha „ . . . . .	63 D/5	162
<b>Datia—</b>		
Nardha (Seonhra), lead . . . . .	54 J/16	298
<b>Dhar (Nimanpur)—</b>		
Bhaurikhara, iron . . . . .	55 B/7	251
Jhirpania „ . . . . .	55 B/7	251
Kanar manganese . . . . .	55 B/3	326
Katotia „ . . . . .	55 B/7	326
Kheria Kund „ . . . . .	55 B/7	326
Pan Kuan „ . . . . .	55 B/6	326
Pola Khal „ . . . . .	55 B/7	326
Ratagarh „ . . . . .	55 B/3	326
Gwallior, salt . . . . .	..	438
Aindhar, lead . . . . .	54 K/2	298
Antri, kaolin . . . . .	54 J/4	287

	SHEET.	PAGE.
<b>CENTRAL INDIA AGENCY—contd.</b>		
<b>Gwalior—contd.</b>		
Bagh, iron . . . . .	46 J/15	251
„ slate . . . . .	„	43
Behat, manganese . . . . .	54 J/12	326
Gwalior, sandstone . . . . .	54 J/4	43
Karhia, copper . . . . .	54 K/1	124
„ lead . . . . .	„	298
Mangor, iron . . . . .	54 J/4	251
Morar, glass-making sand . . . . .	54 J/4	186
Par hill, iron . . . . .	54 J/4	251
Ragonathpur, lead . . . . .	54 J/8	298
Raipur, fire-clay . . . . .	54 J/4	148
Santow, iron . . . . .	54 J/4	251
<b>(Malwa)—</b>		
Piplauda, soda . . . . .	46 M/7	453
<b>Indore (Nimawar)—</b>		
Bain, iron . . . . .	55 B/11	252
Barel, manganese . . . . .	55 B/3	327
Barwai, iron . . . . .	55 B/3	252
„ marble . . . . .	„	43
Bhamar, manganese . . . . .	55 B/11	327
Bowarla, marble . . . . .	46 N/3	43
Chiktimodri, iron . . . . .	55 B/3	252
Chirakhan, marble . . . . .	46 N/3	43
Ghatia, sandstone . . . . .	55 B/3	43
Jiwani, copper . . . . .	55 B/11	124
Kanar R., manganese . . . . .	55 B/3	327

	SHEET.	PAGE.
<b>CENTRAL INDIA AGENCY—contd.</b>		
<b>Indore (Nimawar)—contd.</b>		
Karondia, iron . . . . .	55 B/3	252
Katkut, sandstone . . . . .	55 B/3	43
Kharia, copper . . . . .	55 B/11	124
Kherwan, marble . . . . .	46 N/3	43
Mendikhaira, iron . . . . .	55 B/3	252
Nandnia „ . . . . .	55 B/3	252
Rupabari, sandstone . . . . .	55 B/4	43
Sendrani, iron . . . . .	55 B/11	252
Tamkhan, copper . . . . .	55 B/15	124
<b>Jhabua—</b>		
Amlamal, manganese . . . . .	46 I/8	327
Kajlidongri, „ . . . . .	46 J/5	327
Kanas, mica . . . . .	46 J/10	367
Piplade, iron . . . . .	46 J/9	252
Pitol, manganese . . . . .	46 J/5	328
Rambhapur „ . . . . .	46 J/5	327
Ranapur, mica . . . . .	46 J/10	367
Sanar R., iron . . . . .	46 J/9	252
Tumdia, manganese . . . . .	46 J/6	328
Jobat, asbestos . . . . .	..	16
<b>Kotli—</b>		
Jhanda, diamond . . . . .	63 D/9	163
Naigawa (Neagaon), diamond . . . . .	63 D/13	163
Panna, ochre . . . . .	..	394
Babupur, diamond . . . . .	63 D/5	162



	SHEET.	PAGE.
<b>CENTRAL INDIA AGENCY—contd.</b>		
<b>Panna—contd.</b>		
Bandi diamond . . . . .	63 D/2	162
Birjpur „ . . . . .	63 D/5	162
Durgapur „ . . . . .	63 D/6	163
Itwa „ . . . . .	63 D/5	162
Ken R., iron . . . . .	63 D/1	252
Kodaia, diamond . . . . .	63 D/1	162
Majgama „ . . . . .	63 D/2	162
Maraia „ . . . . .	63 D/2	162
Mohra „ . . . . .	63 D/6	163
Panna „ . . . . .	63 D/2	162
Ranj R. „ . . . . .	63 D/5	162
Sakeriya „ . . . . .	63 D/6	163
Singhpur „ . . . . .	63 D/9	163
Tindini „ . . . . .	63 D/6	163
Udesma (Maharajpur) diamond . . . . .	63 D/6	163
<b>Patarkechar—</b>		
Banari, diamond . . . . .	63 D/9	162
Majgawan „ . . . . .	63 D/13	162
Rewah, fluor-spar . . . . .	..	149
Amarkantak, bauxite . . . . .	64 F/14	22
Amdari, fire-clay . . . . .	64 A/11	148
Amha, sandstone . . . . .	64 A/15	44
Amlia, coal . . . . .	63 L/8	93
Bardghatta, mica . . . . .	64 I/9	367
Bardi, copper . . . . .	63 L/6	124
Bargaon, coal . . . . .	64 E/12	93

	SHEET.	PAGE.
<b>CENTRAL INDIA AGENCY—contd.</b>		
<b>Rewah—contd.</b>		
Barhwa hill, lithographic stone . . . . .	63 H/6	311
Baroudi, fire-clay . . . . .	64 A/10	148
Bhalmuri, coal . . . . .	64 I/4	93
Bharra, barytes . . . . .	63 L/7	18
Bodri, limestone . . . . .	64 E/8	44
Chandia, fire-clay . . . . .	64 A/10	148
Cherka, copper . . . . .	63 H/8	124
Ginga hill, barytes . . . . .	—	18
Jawala Mukhi, coal . . . . .	64 A/14	92
Jhapi, limestone . . . . .	64 A/11	44
Johilla R., coal . . . . .	64 E/3	92
Kalesar, limestone . . . . .	64 A/14	44
Karimati „ . . . . .	64 A/15	44
Khairahi, iron . . . . .	63 L/12	252
Kirintal, sandstone . . . . .	64 A/15	44
Korar, coal . . . . .	64 A/14	92
Kota „ . . . . .	63 L/12	93
Majgama, limestone . . . . .	64 A/14	44
Nandnah, coal . . . . .	64 E/7	93
Nawa Nagar „ . . . . .	63 L/12	93
Padri „ . . . . .	63 L/8	93
Pali „ . . . . .	64 E/3	92
Pipra, corundum . . . . .	64 I/9	139
„ jade . . . . .	„	282
Sabo, coal . . . . .	64 E/12	93
Satna, gypsum . . . . .	63 D/14	227

	SHEET.	PAGE.
<b>CENTRAL INDIA AGENCY—contd</b>		
<b>Rewah—contd.</b>		
Satna, limestone . . . . .	63 D/14	43
Sohagi Ghat, barytes . . . . .	63 H/9	18
Sohagpur, coal . . . . .	64 E/7	93
Son R., iron . . . . .	63	252
Tagwa, copper . . . . .	63 H/15	124
Tipan R., coal . . . . .	64 E/12	93
Umaria, coal . . . . .	64 A/14	94
„ fire-clay . . . . .	„	148
„ kaolin . . . . .	„	287
Urgarhi (Bargawa), silver-lead . . . . .	63 L/8	298
<b>CENTRAL PROVINCES—</b>		
<b>Akola—</b>		
Purna R., salt . . . . .	55 H	438
<b>Amraoti—</b>		
Ellichpur, sandstone . . . . .	55 G/11	44
<b>Balaghat—</b>		
Arjoni, manganese . . . . .	55 O/13	329
Bakoda „ . . . . .	64 C/1	329
Balaghat „ . . . . .	64 C/1	330
Ballarpur „ . . . . .	64 C/1	329
Bamni, mica . . . . .	64 B/12	367
Bhui Hurki, manganese . . . . .	55 O/13	329
Biahtekor „ . . . . .	64 C/1	329
Bodraghat „ . . . . .	64 B/12	330
Botajhari „ . . . . .	55 O/13	329

	SHEET.	PAGE.
<b>CENTRAL PROVINCES—<i>contd.</i></b>		
<b>Balaghat—<i>contd.</i></b>		
Budbuda, manganese . . . . .	55 O/13	329
Chandadoh „ . . . . .	55 O/10	328
Chaukhandi „ . . . . .	55 O/14	329
Chibarghat „ . . . . .	55 O/13	329
Chikmara „ . . . . .	55 O/14	329
Chitadongri, mica . . . . .	64 B/8	367
Dharampur, manganese . . . . .	64 C/9	330
Dharpiwara „ . . . . .	64 C/1	330
Ghondi „ . . . . .	64 C/5	330
Gola Hurki „ . . . . .	—	329
Jairasi „ . . . . .	64 B/16	330
Kanaridha „ . . . . .	64 C/9	330
Katanjheri „ . . . . .	55 O/13	329
Kochawahi „ . . . . .	55 O/13	329
Kothi Pat, bauxite . . . . .	64 C/5	22
Kurthitola, manganese . . . . .	64 C/5	330
Lanji, gold . . . . .	64 C/10	204
Langur, manganese . . . . .	64 C/5	330
Malanjkhadi, copper . . . . .	64 B/12	124
Mau, gold . . . . .	64 B/4	204
Nandgaon, manganese . . . . .	55 O/13	329
Nandhi „ . . . . .	55 O/14	329
Netra „ . . . . .	64 C/1	329
Panchera, gold . . . . .	64 C/1	204
Parasatola, manganese . . . . .	64 B/16	330
Ramrama „ . . . . .	55 O/13	29

	SHEET.	PAGE.
<b>CENTRAL PROVINCES—<i>contd.</i></b>		
<b>Balaghat—<i>contd.</i></b>		
Rupjhar, bauxite . . . . .	64 C/5	21
Salitikri hills, ochre . . . . .	64 C/13	394
Samnapur, bauxite . . . . .	64 C/5	21
Saonri, manganese . . . . .	55 O/14	329
Sirpur „ . . . . .	55 O/13	329
Sonegaon „ . . . . .	55 O/14	328
Sukeindan, ochre . . . . .	—	394
Thirori, manganese . . . . .	55 O/10	328
Tipagarh, bauxite . . . . .	64 B/8	22
Ukua, manganese . . . . .	64 C/5	330
<b>Bastar—</b>		
Baordhig R., (Jungani), mica . . . . .	65 E/9	367
Bharangarh, gold . . . . .	65 A/11	204
Hurteli, iron. . . . .	65 E/1	254
Kolar, gold . . . . .	65 E/1	204
Partabpur „ . . . . .	65 A/9	204
Topal, iron . . . . .	64 H/4	254
<b>Betul—</b>		
Bakar, limestone . . . . .	55 J/4	44
Bhura R., coal . . . . .	55 F/15	94
Enkawari, limestone . . . . .	55 J/4	44
Mardanpur, coal . . . . .	55 F/16	94
Pathé, sandstone . . . . .	55 F/16	44
Shapur, coal . . . . .	55 F/16	94
Sonada „ . . . . .	55 F/15	94
Tawa R., „ . . . . .	55 J/4	94

	SHEET.	PAGE.
<b>CENTRAL PROVINCES—<i>contd.</i></b>		
<b>Bhandara—</b>		
Ambagarh, gold . . . . .	55 O/11	204
Asalpani, manganese . . . . .	55 O/11	333
Biroli, potstone . . . . .	55 O/15	460
Chikhla I, manganese . . . . .	55 O/10	332
Chikhla II „ . . . . .	55 O/14	332
Dini, potstone . . . . .	64 C/2	460
Hatora, manganese . . . . .	55 O/14	331
Kaneri, steatite . . . . .	64 C/4	460
Karli, manganese . . . . .	55 O/10	333
Kosumbah „ . . . . .	55 O/10	331
Kurmura „ . . . . .	55 O/10	332
Miragpur „ . . . . .	55 O/14	331
Mohugaon Ghat „ . . . . .	55 O/14	332
Pachara „ . . . . .	55 O/15	333
Pandarwani „ . . . . .	55 O/14	332
Salebaddi „ . . . . .	55 O/14	332
Sitapathur „ . . . . .	55 O/10	331
Sitasaongi „ . . . . .	55 O/10	332
Sukli „ . . . . .	55 O/10	331
Tirora, gold . . . . .	55 O/15	204
Tumkhera Khurd, asbestos . . . . .	64 C/3	16
<b>Bilaspur—</b>		
Damhamunda, coal . . . . .	64 J/5	102
Gorakona (Kamrakhol), manganese . . . . .	64 F/7	333
Hasdo R., coal . . . . .	64 J	95
Komochoiki, mica . . . . .	64 J/2	367

	SHEET.	PAGE.
<b>CENTRAL PROVINCES—contd.</b>		
<b>Bilaspur—contd.</b>		
Korba, coal . . . . .	64 J/11	95
Padampur, lead . . . . .	64 O/10	299
„ limestone . . . . .	„	32
Ratanpur, manganese . . . . .	64 J/3	333
Sendurgar, coal . . . . .	64 J/5	102
Sonakhan, gold . . . . .	64 K/11	204
Sumedha, coal . . . . .	64 J/11	95
<b>Buldana—</b>		
Lonar, salt . . . . .	56 A/9	438
„ soda . . . . .	„	186, 453
<b>Chanda, ochre . . . . .</b>	..	394
„ salt . . . . .	..	439
Aliwahi, iron . . . . .	55 P/11	254
Asola „ . . . . .	55 P/16	254
Ballarpur, coal . . . . .	56 M/5	95
Bandar, coal . . . . .	55 P/6	96
Bhutara hill, sandstone . . . . .	55 P/3	44
Bissi, iron . . . . .	55 P/6	254
Chamoursi „ . . . . .	56 M/13	254
Chanda, coal . . . . .	56 M/5	96
Dewalgaon, iron . . . . .	55 P/15	254
Emagarh „ . . . . .	65 A/6	255
Ghughus, coal . . . . .	56 M/1	96
Gunjwahi, iron . . . . .	55 P/16	254
Isapur, sandstone . . . . .	56 M/5	45
Jambal Ghat, potstone . . . . .	55 P/6	460

	SHEET.	PAGE.
<b>CENTRAL PROVINCES.—<i>contd.</i></b>		
<b>Chanda—<i>contd.</i></b>		
Kandara, limestone . . . . .	55 L/15	44
Karamgohan „ . . . . .	55 L/16	44
Khandeshwar hill, iron . . . . .	55 P/15	254
Lohara „ . . . . .	55 P/11	254
Pipalgaon „ . . . . .	55 P/6	255
Poser „ . . . . .	65 A/1	255
Ratnapur „ . . . . .	55 P/11	255
Telwasa, coal . . . . .	55 P/4	96
Thana Wasa, copper . . . . .	56 M/9	124
Wairagarh, diamond . . . . .	64 D/3	163
Warora, coal . . . . .	55 P/4	97
„ fire-clay . . . . .	„	148
Wingnur, iron . . . . .	65 A/1	255
Yemlapali „ . . . . .	56 M/16	255
<b>Chhindwara—</b>		
Alesur, manganese . . . . .	55 K/14	335
Anhoni, mineral water . . . . .	55 J/10	382
Barkoi, coal . . . . .	55 J/12	98
Bichua, manganese „ . . . . .	55 K/14	335
Chandametta, coal . . . . .	55 J/12	98
Datla „ . . . . .	55 J/12	98
Devi, manganese . . . . .	55 K/14	335
Dudhara, manganese . . . . .	55 K/14	335
„ rose quartz . . . . .	„	176
Gaimukh, manganese . . . . .	55 K/13	334
Ghoti „ . . . . .	55 K/14	335



	SHEET.	PAGE.
<b>CENTRAL PROVINCES—contd.</b>		
<b>Chhindwara—contd.</b>		
Gowari Warhona manganese . . . . .	55 K/14	335
Hingladevi, coal . . . . .	55 J/12	98
Kachi Dhana, manganese . . . . .	55 K/14	334
Kanhan R., coal . . . . .	55 J/12	98
Khairi, rose quartz . . . . .	55 K/14	176
Lakhanwara, manganese . . . . .	55 K/13	334
Pench R., coal . . . . .	55 J/12	97
Sirgora, coal . . . . .	55 J/16	98
„ sandstone . . . . .	„	44
Sitapar, manganese . . . . .	55 K/14	334
Tawa R., coal . . . . .	55 J/8	98
Wagora, manganese . . . . .	55 K/14	335
<b>Damoh—</b>		
Hatta, lithographic stone . . . . .	54 P/12	311
<b>Drug—</b>		
Basantapur, iron . . . . .	64 C/14	256
Borla „ . . . . .	64 C/15	256
Chicholi, copper . . . . .	64 C/12	124
„ fluor-spar . . . . .	„	149
„ silver-lead . . . . .	„	299
Chutwala, iron . . . . .	64 C/14	256
Dhalli Itejhara, iron . . . . .	64 H/2	256
Gandai, ochre . . . . .	64 G/2	394
Jurlakhar, iron . . . . .	64 C/10	256
Katulkassa „ . . . . .	64 C/11	256
Kami, iron . . . . .	64 C/14	256

	SHEET.	PAGE.
<b>CENTRAL PROVINCES—<i>contd.</i></b>		
<b>Drug—<i>contd.</i></b>		
Magarkund, iron . . . . .	—	256
Thakurtola, ochre . . . . .	64 C/14	394
Worar, copper . . . . .	64 C/16	125
„ iron . . . . .	„	256
<b>Hoshangabad—</b>		
Anhoni Samoni, mineral water . . . . .	55 J/6	382
Chirakhan, sandstone . . . . .	55 B/15	45
Hoshangabad, flag-stone . . . . .	55 F/9	45
Joga, silver-lead . . . . .	55 B/15	299
Kajberi, iron . . . . .	55 B/15	260
Lokartalai, coal . . . . .	55 F/7	94
Nimkhera (Lemekhaira), iron . . . . .	55 B/15	260
Sontalai, iron . . . . .	55 B/15	260
„ manganese . . . . .	„	336
<b>Jashpur—</b>		
Pharsabahal, gold . . . . .	64 N/14	204
<b>Jubbulpore—</b>		
Agaria, iron . . . . .	64 A/3	257
Bhatadon, manganese . . . . .	64 A/3	337
Bijeeragogarh, bauxite . . . . .	64 A/9	21
Bijori, iron . . . . .	64 A/5	257
Darshani, manganese . . . . .	64 A/2	337
Dharampur, iron . . . . .	64 A/3	258
„ manganese . . . . .	„	338
Ghogra, iron . . . . .	64 A/3	258
„ manganese . . . . .	„	337

	SHEET.	PAGE.
<b>CENTRAL PROVINCES.—<i>contd.</i></b>		
<b>Jubbulpore—<i>contd.</i></b>		
Gosalpur, iron . . . . .	64 A/3	258
„ manganese . . . . .	„	337
Gowari, steatite . . . . .	55 M/16	461
Imalia, iron . . . . .	64 A/5	258
Jauli, iron . . . . .	64 A/3	258
„ ochre . . . . .	„	394
Jubbulpore, fire-clay . . . . .	55 M/16	148
„ kaolin . . . . .	„	287
Kanhwara hills, iron . . . . .	64 A/5	258
Kasai hill, manganese . . . . .	64 A/2	337
Katni, bauxite . . . . .	64 A/5	21
„ fullers' earth . . . . .	„	150
„ iron . . . . .	„	257
„ limestone . . . . .	„	45
Lalpur, steatite . . . . .	55 M/16	461
Lameta Ghat, coal . . . . .	55 M/16	98
Lora hill, iron . . . . .	64 A/3	258
Mansakra, manganese . . . . .	64 A/3	337
Marble Rocks, agate . . . . .	55 M/16	152
„ „ amethyst . . . . .	„	155
„ „ marble . . . . .	„	45
„ „ steatite . . . . .	„	461
Murwara, bauxite . . . . .	64 A/5	23
Nonsar, manganese . . . . .	55 M/16	338
Sakri] „ . . . . .	64 A/3	337
Saroli, iron . . . . .	64 A/3	258

	SHEET.	PAGE.
<b>CENTRAL PROVINCES—contd.</b>		
<b>Jubbulpore—contd.</b>		
Sihora, iron . . . . .	64 A/3	257
Silondi „ . . . . .	64 A/3	259
Sleemanabad, barytes . . . . .	64 A/6	18
„ copper . . . . .	„	125
„ fluor-spar . . . . .	„	149
„ gold . . . . .	„	204
„ silver-lead . . . . .	„	299
<b>Korea—</b>		
Hasdo R., coal . . . . .	64 I	99
Jhagrakhand „ . . . . .	64 I/4	99
Koreagarh „ . . . . .	64 I/8	99
Kurasia „ . . . . .	64 I/8	99
Sankat „ . . . . .	64 I/11	99
<b>Mandla—</b>		
Banjar R., gold . . . . .	64 B/7	205
<b>Nagpur—</b>		
Agargaon, tungsten . . . . .	55 O/8	487
Beldongri, manganese . . . . .	55 O/7	342
Bhandarbori „ . . . . .	55 O/7	344
Borda „ . . . . .	55 O/7	341
Dumri Kalan „ . . . . .	55 O/3	341
Ghogara „ . . . . .	55 O/3	345
Guguldoh, manganese . . . . .	55 O/7	344
Gumgaon „ . . . . .	55 K/15	339
Junapani „ . . . . .	55 O/7	345
Kacharwahi „ . . . . .	55 O/7	343

	SHEET.	PAGE.
<b>CENTRAL PROVINCES—<i>contd.</i></b>		
<b>Nagpur—<i>contd.</i></b>		
Kalmeshwar, ochre . . . . .	55 K/16	395
Kandri, manganese . . . . .	55 O/7	340
„ opal . . . . .	„	175
Khandala, manganese . . . . .	55 O/7	343
Khorari, limestone . . . . .	55 O/4	45
Kodegaon, manganese . . . . .	55 K/15	339
„ opal . . . . .	„	175
Lohdongri, manganese . . . . .	55 O/7	342
Mandri „ . . . . .	55 O/7	343
Mandvi Bir „ . . . . .	55 O/3	345
Manegaon „ . . . . .	55 O/7	344
Mansar „ . . . . .	55 O/7	340
Mohugaon „ . . . . .	55 O/3	344
Nagardhan „ . . . . .	55 O/7	342
Nandapuri „ . . . . .	55 O/7	342
Nandgondi „ . . . . .	55 O/2	340
Nima (Nimbha), lead . . . . .	55 O/3	299
Pali, manganese . . . . .	55 O/3	345
Panchala „ . . . . .	55 O/7	343
Parsioni „ . . . . .	55 O/3	341
Parsoda „ . . . . .	55 O/7	341
Rajkota „ . . . . .	55 O/7	345
Ramdongri „ . . . . .	5 O/3	339
Risara „ . . . . .	55 K/15	340
Satak „ . . . . .	55 O/7	341
Silewada, sandstone . . . . .	55 O/3	45

	SHEET.	PAGE.
<b>CENTRAL PROVINCES—<i>contd.</i></b>		
<b>Nagpur—<i>contd.</i></b>		
Sitabaldi hill, basalt . . . . .	55 O/4	45
Sitagondi, manganese . . . . .	55 O/3	340
Waregaon „ . . . . .	55 O/7	343
<b>Narsinghpur—</b>		
Birmanghat, copper . . . . .	55 M/4	125
Omarpani, iron . . . . .	55 I/16	259
Mohpani, coal . . . . .	55 J/14	100
Tendukhera, iron . . . . .	55 I/16	259
<b>Nimar—</b>		
Akhund, sandstone . . . . .	55 B/4	46
Basnia, iron . . . . .	55 B/12	260
Billora „ . . . . .	55 B/4	260
Chandgarh, iron . . . . .	55 B/11	260
„ manganese . . . . .	„	345
Gohugaon, manganese . . . . .	55 B/12	346
Jamdihi R. „ . . . .	55 B/11	346
Khudia, iron . . . . .	55 B/12	260
„ limestone . . . . .	„	45
Kotra, iron . . . . .	55 B/12	260
Matni „ . . . . .	55 B/11	260
Mohla „ . . . . .	55 B/11	260
Nandana „ . . . . .	55 B/11	260
<b>Raigarh—</b>		
Ib R., coal . . . . .	64 O/13	101
Kodaloi, iron . . . . .	64 O/13	260
Rampur, coal . . . . .	64 O/13	100

	SHEET.	PAGE.
<b>CENTRAL PROVINCES—contd.</b>		
<b>Raipur</b> , lithographic stone . . . . .		311
„ sandstone . . . . .		46
Bhatagaon, lignite . . . . .	64 G/12	307
Ghugwa „ . . . . .	64 G/12	307
Jumrao „ . . . . .	64 G/12	307
Murkatola, pottery clay . . . . .	64 H/11	287
Rajoo (Rajim), gold . . . . .	64 H/13	205
<b>Sarguja</b> , bauxite . . . . .		21
Bansar, coal . . . . .	64 M/8	102
Bhelaunda, silver-lead . . . . .	64 M/5	300
Bisrampur, coal . . . . .	64 M/4	101
Chiraikund, lead . . . . .	64 I/13	300
Jhilmilli, coal . . . . .	64 I/15	98
Kutkona „ . . . . .	64 M/4	102
Lakhanpur „ . . . . .	64 N/1	102
Mahan R. „ . . . .	64 M/3	101
Manpur „ . . . . .	64 M/6	102
Massan R. „ . . . .	—	101
Morne R. „ . . . .	64 M/6	102
Panchbhaini „ . . . .	64 I/16	102
Parsa „ . . . . .	64 J/13	102
Pasang R. „ . . . .	64 M/4	101
Ramkola „ . . . . .	64 I/14	102
Rampur . . . . .	64 J/13	102
Rer R. „ . . . . .	64 I/16	101
Tatapani „ . . . . .	64 M/10	102
„ mineral water . . . . .	„	382

	SHEET.	PAGE.
<b>CENTRAL PROVINCES.—<i>contd.</i></b>		
<b>Saugor —</b>		
Hirapur, iron . . . . .	54 P/3	260
<b>Seoni—</b>		
Amagarh, bauxite . . . . .	55 N/12	23
Atarwani „ . . . . .	55 O/9	23
Chichuldoh, manganese . . . . .	55 O/9	346
Dhobitola „ . . . . .	55 O/10	346
Khirki „ . . . . .	55 O/10	346
Pachdar, gold . . . . .	55 O/6	205
<b>Udaipur—</b>		
Bakaruma, gold . . . . .	64 N/6	205
Dharamjaigarh (Rabkhob), gold . . . . .	64 N/3	205
Jamargi, gold . . . . .	64 N/11	205
Kamhar, gold . . . . .	64 N/2	205
Mand R., coal . . . . .	64 N	102
„ „ gold . . . . .	„	205
Salkao, gold . . . . .	64 N/2	205
<b>Wardha—</b>		
Paunar, soda . . . . .	55 L/9	382
<b>Yeotmal—</b>		
Khair, mineral water . . . . .	56 I/13	382
Malagarh hill, manganese . . . . .	56 M/1	346
Pisgaon, coal . . . . .	55 L/16	103
Wun, coal . . . . .	55 L/16	103
„ potstone . . . . .	„	461
Yanak hill, iron . . . . .	56 M/1	260



	SHEET.	PAGE.
<b>GOA, iron</b> . . . . .	..	247
Bicholim, manganese . . . . .	48 E/14	347
Kandiapar „ . . . . .	48 I/3	347
Korqui (Kudkee) „ . . . . .	48 I/2	347
Kurado „ . . . . .	48 I/3	347
Malan „ . . . . .	48 I/3	347
Malpona „ . . . . .	48 I/3	347
Morlem „ . . . . .	48 I/2	347
Mormugao, alum . . . . .	48 E/15	5
Peritem, manganese . . . . .	48 I/4	347
 <b>HYDERABAD, fullers' earth</b> . . . . .	..	150
„ soda . . . . .	..	435
 <b>Adilaba.—</b>		
Aksapali, coal . . . . .	56 M/12	104
Aksapur „ . . . . .	56 M/7	103
Antargaon „ . . . . .	56 M/10	103
Chinur „ . . . . .	56 N/13	103
Dimdurti (Dernathoorty), iron . . . . .	56 I/12	261
Khairgura, coal . . . . .	56 M/8	101
Kota „ . . . . .	56 N/13	103
Sandrapali „ . . . . .	56 N/13	103
Sasti „ . . . . .	56 M/5	104
Tandur „ . . . . .	56 M/8	104
 <b>Atraf-i-Balda—</b>		
Hyderabad, amethyst . . . . .	56 K/7	155
„ opal . . . . .	„	175

	SHEET.	PAGE.
<b>HYDERABAD—contd.</b>		
<b>Bidar—</b>		
Bidar, laterite . . . . .	56 G/9	46
Boghiri, iron . . . . .	—	261
Hulfergah (? Hulburga), manganese . . . . .	56 G/5	347
Kaliani, iron . . . . .	56 C/13	261
Marli „ . . . . .	—	261
<b>Gulbarga—</b>		
Baichubal, salt . . . . .	56 D/10	439
Bhima R., granitoid gneiss . . . . .	56 H/2	46
Channur, limestone . . . . .	56 D/11	35
Gagulu, granitoid gneiss . . . . .	56 H/3	46
Mudanur, mineral water . . . . .	56 D/6	382
„ pyrites . . . . .	„	473
Shorapur, lithographic stone . . . . .	56 D/14	311
Uguni, limestone . . . . .	56 D/6	35
Wujul, mineral water . . . . .	56 D/11	382
<b>Karimnagar—</b>		
Maitpalli, potstone . . . . .	—	461
Sirsilla „ . . . . .	56 J/15	461
Yenchapali (Enchinpalli), antimony . . . . .	65 B/6	12
<b>Nalgunda—</b>		
Kistna R., limestone . . . . .	56 P	46
Nalgonda, copper . . . . .	56 O/8	125
<b>Nizamabad—</b>		
Konasamudram, fire-clay . . . . .	56 J/10	149
„ iron . . . . .	„	261

	SHEET.	PAGE.
<b>HYDERABAD—contd.</b>		
<b>Nizamabad—contd.</b>		
Kondapur, iron . . . . .	56 J/6	261
Mirtapalli „ . . . . .	—	261
<b>Raichur—</b>		
Gajendragarh, syenite . . . . .	48 M/14	46
Gobur, granitoid gneiss . . . . .	56 H/3	46
Gutt Bichal, diorite . . . . .	57 E/5	46
Hanamsagar, sandstone . . . . .	57 A/1	47
Hutti, gold . . . . .	56 D/12	205
Jaldrug, granitoid gneiss . . . . .	56 D/7	46
Jiaddigudd hills, iron . . . . .	57 A/5	262
Mosulakal, syenite . . . . .	56 H/3	46
Topuldodi, gold . . . . .	56 D/16	205
Wondalli „ . . . . .	56 D/12	205
<b>Warangal—</b>		
Alapalli, coal . . . . .	65 C/5	104
Baiora (Buga), mineral water . . . . .	65 C/9	383
Bandalla, coal . . . . .	65 B/8	104
Banjur, corundum . . . . .	65 C/7	139
Chandragunda, coal . . . . .	65 C/11	104
Damenapilli, potstone . . . . .	56 O/9	461
Gharibpet, garnet . . . . .	65 C/11	170
„ kyanite . . . . .	„	174
Gobuguru, corundum . . . . .	65 C/7	139
Golaguda „ . . . . .	65 C/7	139
Gudalur, gold . . . . .	65 B/11	206
Kamaram, coal . . . . .	65 B/8	104

	SHEET.	PAGE.
<b>HYDERABAD—<i>contd.</i></b>		
<b>Warangal—<i>contd.</i></b>		
Kannigiri, coal . . . . .	65 C/11	104
„ corundum . . . . .	„	139
Kinarsani R., gold . . . . .	65 C/14	206
Lingalla, coal . . . . .	65 B/16	104
Madavaram „ . . . . .	65 G/3	104
Pedda Gopatti, iron . . . . .	65 C/8	262
Singareni, coal . . . . .	65 C/6	105
„ iron . . . . .	„	262
Warangal, rose quartz . . . . .	56 O/9	176
Yelgurrup, copper . . . . .	—	125
<b>KASHMIR—</b>		
<b>Baltistan—</b>		
Askoli (Chongo), mineral water . . . . .	43 M/14	383
Basha R., gold . . . . .	43 M/6	206
Bisil (Behitsil), mineral water . . . . .	43 M/5	383
„ sulphur . . . . .	„	473
Chutran, mineral water . . . . .	43 M/6	383
Duchin (Dushkin), mineral water . . . . .	43 I/15	383
„ „ sulphur . . . . .	„	473
Kapalu, gold . . . . .	52 A/8	206
Khorkan, mineral water . . . . .	52 A/15	383
„ sulphur . . . . .	„	473
Rondu, copper . . . . .	43 M/2	125
Tosha, mineral water . . . . .	43 M/10	383
<b>Changchengmo—</b>		
Gokra, mineral water . . . . .	52 J/15	383

	SHEET.	PAGE.
<b>KASHMIR—<i>contd.</i></b>		
<b>Dras—</b>		
Kharbu, gold . . . . .	43 N/14	206
<b>Jammu—</b>		
Dandli, coal . . . . .	43 G/14	105
Kalakot „ . . . . .	43 K/8	105
Ladda „ . . . . .	43 O/4	106
Lodhra „ . . . . .	43 O/4	106
Mehowgala „ . . . . .	43 K/8	106
Sangar Marg, coal . . . . .	43 K/12	106
„ „ iron . . . . .	„	263
Siro valley, coal . . . . .	43 K/8	107
<b>Kashmir, marble . . . . .</b>	..	47
„ peat . . . . .	..	396
Harpat Nag, copper . . . . .	43 O/5	125
Islamabad, mineral water . . . . .	43 O/2	383
Kothair, iron . . . . .	43 O/6	262
Pampur, mineral water . . . . .	43 J/16	383
Soap (Sof), iron . . . . .	43 O/6	262
Srinagar, basalt . . . . .	43 J/16	47
<b>Ladakh—</b>		
Achinathang, gold . . . . .	52 B/10	206
Kio (Skio) „ . . . . .	52 G/5	206
Knarung, mineral water . . . . .	52 F/8	383
<b>Nubar—</b>		
Chusan (Panamik), mineral water . . . . .	52 F/9	384
<b>Padar—</b>		
Barali, arsenic . . . . .	52 C/3	15

	SHEET.	PAGE.
<b>KASHMIR—contd.</b>		
<b>Padar—contd.</b>		
Machel, beryl . . . . .	52 C/6	156
Soomjam, sapphire . . . . .	52 C/6	181
„ tourmaline . . . . .	„	184
<b>Itudok—</b>		
Kyango Traggar, agate . . . . .	52 N/7	155
<b>Rupshu—</b>		
Chagya Samdo, gold . . . . .	52 L/11	206
Puga, borax . . . . .	52 K/8	24
„ mineral water . . . . .	„	384
„ sulphur . . . . .	„	473
<b>Zangskar—</b>		
Yelchung, copper . . . . .	52 C/13	126
<b>KHORASAN—</b>		
Nishapur, turquoise . . . . .	..	185
<b>MADRAS—</b>		
Anantapur, fullers' earth . . . . .	..	150
Atmakur, corundum . . . . .	57 F/6	140
Bellagupa, saltpetre . . . . .	57 F/2	450
Danduvarapalli, corundum . . . . .	57 F/10	140
Maddalcheruvu Sivapuram, corundum . . . . .	57 F/7	140
Manirevu . . . . .	57 F/6	140
Motalachintarpalli . . . . .	—	140
Narjampalli, steatite . . . . .	57 J/2	461
Nutimadugu, corundum . . . . .	57 F/7	140
Obalapuram „ . . . . .	57 F/6	140

	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Anantapur—contd.</b>		
Palavenkatapuram, corundum . . . . .	57 F/6	140
Paramatiyalaru „ . . . . .	57 F/6	140
Pasalur „ . . . . .	57 F/10	140
Punighi „ . . . . .	—	140
Ramgiri, gold . . . . .	57 F/7	207
Reddipalli, corundum . . . . .	57 F/10	140
„ potstone . . . . .	„	461
Siddarampuram, corundum . . . . .	—	140
Thimmapuram „ . . . . .	57 F/6	140
Wajra Karur, diamond . . . . .	57 E/8	163
<b>Arcot (North), building stone . . . . .</b>	..	48
Gudiyatam, iron . . . . .	57 L/13	265
Pathur, steatite . . . . .	57 O/4	461
Paupantangalam, kaolin . . . . .	57 P/5	288
Pohur, iron . . . . .	57 P/2	263
Sannamalai, iron . . . . .	—	263
Tilavaram, ochre . . . . .	57 O/11	305
Vollore, iron . . . . .	57 P/1	265
<b>Arcot (South), iron . . . . .</b>	..	263
„ „ salt . . . . .	..	439
Chinna Tirupadi, iron . . . . .	58 I/14	265
Madur hill, iron . . . . .	58 I/9	265
Panroti, pottery clay . . . . .	58 M/9	288
Porto Novo, iron . . . . .	58 M/15	265
Sankaraparam, iron . . . . .	58 I/13	265

	SHEET.	PAGE.
<b>MADRAS—contd,</b>		
<b>Arcot (South)—contd.</b>		
Semangalam, kaolin . . . . .	57 P/12	288
Tirnavalour (Tiruvananalur), jade-stone . . . . .	58 M/5	48, 283
Tiruvannamalai, iron . . . . .	57 P/4	265
Trivandipuram, ochre . . . . .	58 M/10	395
Vellumpalaiyam, sandstone . . . . .	58 M/5	48
Velur, sandstone . . . . .	58 M/5	48
Wodiapolliam, sulphur . . . . .	58 M/6	474
<b>Bellary, iron . . . . .</b>	..	263
Angur, potstone . . . . .	48 N/13	49, 462
Arsapur hill, potstone . . . . .	57 B/2	462
Copper Mt. copper . . . . .	57 A/16	126
Dammur, granite . . . . .	57 A/15	43
Daroji, magnesite . . . . .	57 A/11	312
Harappanahalli, copper . . . . .	48 N/13	126
„ potstone . . . . .	„	49, 462
Hurlihall, porphyry . . . . .	57 B/10	48
Huvina Hadagalli, diamond . . . . .	48 M/16	164
„ „ limestone . . . . .	„	49
Jajkul Gudda, gold . . . . .	57 B/1	207
Kallakurti, prophyry . . . . .	57 F/1	49
Kapgal hill, granite . . . . .	57 A/16	48
Kurikuppe (Koreekoompa) hill, porphyry . . . . .	57 A/12	48
Mallapan Gudda, iron . . . . .	48 N/13	265
Metra, green quartzite . . . . .	57 A/11	49
Nemkal „ „ . . . . .	57 A/16	49
Nilgunda hill, potstone . . . . .	48 N/14	49, 462



	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Bellary—contd.</b>		
Siddapan Konda, copper . . . . .	57 E/2	126
Somalapuram, steatite . . . . .	57 A/12	462
Tallur, limestone . . . . .	57 A/12	49
Teligi hill, manganese . . . . .	48 N/14	348
Tornagal hill, porphyry . . . . .	57 A/12	48
Ubbalagandi, jasper . . . . .	57 A/12	49
<b>(Sandur)—</b>		
Adargani, ochre . . . . .	57 A/12	395
Ettinahalli (Yettunahalli), jasper . . . . .	57 A/12	49
Kammat Haruvu, iron . . . . .	57 A/12	265
„ „ manganese . . . . .	„	349
Kannevihalhi, iron . . . . .	57 A/12	265
Ramandrug, antimony . . . . .	57 A/8	12
„ manganese. . . . .	„	349
„ mineral water . . . . .	„	384
Timappagarh (Timungarh), jasper . . . . .	57 A/12	49
<b>Chingleput, iron . . . . .</b>	...	263
Attrampakkam R., pottery clay . . . . .	57 O/16	288
Chingleput, iron . . . . .	57 P/14	265
Conjeveram, sandstone . . . . .	57 P/9	40
Coopum, pottery clay . . . . .	66 C/4	288
Cuddapary Choultry, gneiss . . . . .	66 D/1	49
Kathiwakam (Ennur), gypsum . . . . .	66 C/8	227
Monegur Choultry „ . . . . .	66 C/8	227
Nundiveram, granitoid gneiss . . . . .	66 D/1	49
Palaveram, hornblendic gneiss . . . . .	66 D/1.	49

	SHEET.	PAGE.
<b>MADRAS—<i>contd.</i></b>		
<b>Chingleput—<i>contd.</i></b>		
Puttandalum, hornblendic gneiss . . . . .	66 D/1	49
Red Hills, manganese . . . . .	66 C/4	350
Sattavedu, sandstone . . . . .	57 O/15	49
Seven Pagodas, granitoid gneiss . . . . .	66 D/2	49
Sirgulpilli, sandstone . . . . .	—	49
Sripermatur (Sriperumbudur), pottery clay . . . . .	57 P/13	288
Tirukarikunum, granitoid gneiss . . . . .	66 D/2	49
Wallajabad, hornblendic gneiss . . . . .	57 P/13	49
<b>Coimbatore—</b>		
Bensibetta, gold . . . . .	58 E/6	207
Coimbatore, saltpetre . . . . .	58 B/13	450
Edamaranahalli, steatite . . . . .	57 H/8	462
Gopichettipalaiyam, corundum . . . . .	58 E/7	140
Hadabanatta (Adapullnatta), copper . . . . .	58 E/5	126
„ „ gold . . . . .	„	207
Kandyankovil, corundum . . . . .	58 E/8	140
Kangayam, chrysoberyl . . . . .	58 F/9	157
„ corundum . . . . .	„	140
„ zircon . . . . .	„	185
Kanjikovil, kyanite . . . . .	58 E/11	174
Karutepalaiyam, corundum . . . . .	58 E/12	140
„ mica . . . . .	58 E/12	367
Kavudahalli, gold . . . . .	57 H/8	207
Kollegal Taluk, iron . . . . .	57 H	265
Madukarai, marble . . . . .	58 B/13	49
Padyur (Pattalai), aquamarine . . . . .	58 E/8	156

	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Coimbatore—contd.</b>		
Padyur (Pattalai), corundum . . . . .	58 E/8	141
„ „ mica . . . . .	„	367
Palghat, iron . . . . .	58 B/9	263
Perandurai, asbestos . . . . .	58 E/11	16
Porstgaundapalaiyam, gohl . . . . .	58 E/5	207
Satyanangalam Taluk, iron . . . . .	58 E	265
Selangapalaiyam, corundum . . . . .	58 E/11	141
Shigrispalaiyam, corundum . . . . .	58 E/7	141
Virapanoli (? Virapundi), manganese . . . . .	58 A/16	350
<b>Coorg—</b>		
Fraserpet, magnesite . . . . .	48 P/15	312
Pollibetta, mica . . . . .	48 P/16	368
Seringula, magnesite . . . . .	48 P/11	312
<b>Cuddapah, slate . . . . .</b>	..	50
Chennur, diamond . . . . .	57 J/14	164
Gandikot, soda . . . . .	57 J/5	455
Gurapur, diamond . . . . .	57 J/14	165
Hussanapur (Dupaud), diamond . . . . .	—	165
Jamaladugu (Gulagunta) „ . . . . .	57 J/5	165
Jangamrajpilli, antimony . . . . .	57 J/13	12
„ copper . . . . .	„	126
„ silver-lead . . . . .	„	300
Kanuparti (Kondapetta), diamond . . . . .	57 J/14	164
Kotelur (? Kottur), lead . . . . .	57 J/10	300
Lamdur, diamond . . . . .	—	165
Lankamalai, lead . . . . .	57 J/14	300

	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Cuddapah—contd.</b>		
Magasanipilli, lead . . . . .	57 J/14	300
Nerji, limestone . . . . .	57 J/10	50
Ovalampalli (Woblapalli), diamond . . . . .	57 J/14	165
Pinchetgapadu, diamond . . . . .	—	165
Ramiapullem, iron . . . . .	—	263
Yeraguntlakota, iron . . . . .	57 O/5	266
<b>Ganjam, salt . . . . .</b>	..	439
Bodiamba, mica . . . . .	74 A/9	368
Boirani, manganese . . . . .	74 A/14	350
„ opal . . . . .	74 A/14	176
Goradandi, mica . . . . .	74 A/9	368
Gudhiari, manganese . . . . .	74 A/14	350
Guma hills, mica . . . . .	74 B/1	368
Gumsur, iron . . . . .	74 A/9	263
Jillundi, mica . . . . .	74 A/9	368
Kalikot, manganese . . . . .	74 E/2	350
Nautan-Barampur, manganese . . . . .	74 E/2	350
Rambha, manganese . . . . .	74 E/2	350
Rayagada hills, mica . . . . .	—	368
Sisunda, mica . . . . .	73 D/12	368
<b>Godavari, iron . . . . .</b>	..	263
Beddadanol, coal . . . . .	65 G/4	107
Bhadrachalam, diamond . . . . .	65 C/14	165
Gondala, mineral water . . . . .	65 C/14	384
Kunnavaram, molybdenum . . . . .	65 G/6	389
Peddapuram, sandstone . . . . .	65 K/4	50

	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Godavari—contd.</b>		
Perakonda, graphite . . . . .	65 G/6	221
Polavaram, iron . . . . .	65 G/12	266
Rajahzompalli, coal . . . . .	65 G/6	105
Rajamahendri, agate . . . . .	65 G/16	155
„ kaolin . . . . .	„	288
„ rock crystal . . . . .	„	176
Surisanianam, sulphur . . . . .	65 L/3	474
<b>Guntur, iron . . . . .</b>	..	263
Amaravati, limestone . . . . .	65 D/6	50
Bellamkonda, saltpetre . . . . .	65 D/2	450
Chebrolu, sandstone . . . . .	65 D/12	50
Chintapilli, lithographic stone . . . . .	65 D/2	311
Dachapilli „ „ . . . . .	56 P/10	311
Gantlapalem (Agnigundala), copper . . . . .	56 P/12	127
Karampudi, lead . . . . .	56 P/11	301
Kollur, diamond . . . . .	65 D/2	165
Kondavidu hills, granitoid gneiss . . . . .	65 D/7	50
Madagula, diamond . . . . .	56 P/10	166
Malavaram (Damarepad), diamond . . . . .	56 P/6	166
Pavulur, sandstone . . . . .	66 A/1	50
Pulichinta, diamond . . . . .	65 D/2	166
Tangellamudi, sandstone . . . . .	65 D/11	50
<b>Kistna, iron . . . . .</b>	..	263
Atkur, diamond . . . . .	65 D/6	167
Barthenipadu, diamond. . . . .	65 D/6	167
Bezwada, garnet . . . . .	65 D/10	171
„ graphite . . . . .	„	221

	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Kistna—contd.</b>		
Golapilli, diamond . . . . .	65 D/14	166
Jaggayapetta (Batavole), lithographic stone . . . . .	65 D/1	311
Janampet, sandstone . . . . .	65 H/1	50
Kodavatakallu, diamond . . . . .	65 D/2	167
Komera, iron . . . . .	65 H/5	266
Kondapilli, garnet. . . . .	65 D/10	171
„ lithographic stone . . . . .	„	311
Latchmipuram, iron . . . . .	65 G/8	266
Malavilli (Muleli), diamond . . . . .	65 D/14	166
Mugalur, diamond . . . . .	65 D/6	167
Munalur, diamond . . . . .	65 D/6	167
Partial, diamond . . . . .	65 D/6	167
Peddavegi, sandstone . . . . .	65 H/1	50
Pentlam, iron . . . . .	65 H/5	266
Ramakapeta, iron. . . . .	65 D/13	266
Tundkalpudi, sandstone . . . . .	65 H/1	50
Ustapalli, diamond . . . . .	65 D/2	167
<b>Kurnool, iron . . . . .</b>	„	263
Ambapuram, steatite . . . . .	57 I/3	463
Balapalapalli, steatite . . . . .	57 I/3	463
Banganapalle, diamond . . . . .	57 I/3	168
„ manganese . . . . .	„	351
Bannur, diamond . . . . .	57 I/2	168
Baswapur (Basavapuram), cerium . . . . .	57 I/11	429
„ „ diamond . . . . .	„	168
„ „ silver-lead . . . . .	„	301

	SHEET.	PAGE.
<b>MADRAS—<i>contd.</i></b>		
<b>*Kurnool—<i>contd.</i></b>		
Baswapur (Basavapuram) zinc . . . . .	57 I/11	489
Byanpalli, diamond . . . . .	57 I/2	169
Chandrapalli, barytes . . . . .	57 E/16	19
Coomroli, diamond . . . . .	57 I/2	169
Deomurru, diamond . . . . .	57 I/1	169
Devanur, diamond . . . . .	57 I/6	169
Dhoni, diamond . . . . .	57 E/15	169
„ steatite . . . . .	„	462
Gani, copper . . . . .	57 I/6	127
Gazerpilli (Gazulapalli), barytes . . . . .	57 I/11	19
„ „ diamond . . . . .	„	169
Gudipaud, diamond . . . . .	57 I/2	169
Gujjalakonda, copper . . . . .	57 M/5	127
Gumankonda, copper . . . . .	57 I/6	127
Gunigal, iron . . . . .	57 I/2	266
Gurumankonda (Gottimanikonda), diamond . . . . .	57 I/2	169
Jaladurgam, barytes . . . . .	57 E/15	19
Kadraabad, marble . . . . .	57 I/1	51
Kalva, mineral water . . . . .	57 I/2	384
Kannamadakalu, diamond . . . . .	57 I/2	169
Khundair R., limestone . . . . .	57 I/8	50
Koilkuntla, silver-lead . . . . .	57 I/8	301
Kommemarri, copper . . . . .	57 E/16	127
Kurnool, marble . . . . .	57 I/1	51
Lanjabanda, mineral water . . . . .	57 I/3	384
Lanjapolur, diamond . . . . .	57 I/1	169

	SHEET.	PAGE
<b>MADRAS—contd.</b>		
<b>Kurnool—contd.</b>		
Madavaram, diamond . . . . .	57 I/3	169
„ magnesite . . . . .	„	313
„ steatite . . . . .	„	456, 462
Maddikerai, saltpetre . . . . .	57 E/8	450
Mahanandi, mineral water . . . . .	57 I/11	384
Markapur, saltpetre . . . . .	57 M/6	450
Munimadagu, diamond . . . . .	57 E/15	169
Muravakonda, diamond . . . . .	56 L/8	169
Musila Cheruvu, magnesite . . . . .	57 I/3	313
„ „ steatite . . . . .	„	462
Nagireddipalli, manganese . . . . .	57 I/12	351
Nalamalai, iron . . . . .	—	266
Nandavaram, manganese . . . . .	57 I/7	351
Oruvakal (Voravakollu), diamond . . . . .	57 I/2	169
Panchalingala, diamond. . . . .	57 I/1	169
Pendekallu, steatite . . . . .	57 E/11	463
Polur, diamond . . . . .	57 I/6	169
Pyapalli, diamond. . . . .	57 E/12	169
Ramulkota, diamond . . . . .	57 I/2	169
Roodrar (Rudravaram), iron . . . . .	57 I/12	266
„ „ manganese. . . . .	„	350
Saitankota, diamond . . . . .	—	170
Somadapilli (Somayazulapalli), copper . . . . .	57 I/2	127
Tandrapad, diamond . . . . .	57 I/1	170
Timapuram, diamond . . . . .	57 I/2	170
Tungabhadra R., lithographic stone . . . . .	57 E	311



	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Karnool—contd.</b>		
Viraypalle, diamond . . . . .	—	170
Yembye diamond . . . . .	57 I/2	170
<b>Madura, iron . . . . .</b>	..	264
„ saltpetre . . . . .	..	451
Ambalathandi, granitoid gneiss . . . . .	58 K/1	51
Arupukotai, granitoid gneiss . . . . .	58 K/2	51
Fort Hamilton, bauxite . . . . .	58 F/8	21
Kalligudi, granitoid gneiss . . . . .	58 G/14	51
Kodaikanal, bauxite . . . . .	58 F/8	21
Kotaiparai, hornblendic gneiss . . . . .	58 K/3	51
Manurupur, granitoid gneiss . . . . .	58 K/2	51
Talakanath, gold . . . . .	58 F/15	208
Palani (? Palni), ferro-tantalite . . . . .	58 F/11	430
Puda-kudi, manganese . . . . .	—	351
Puliarpatti, granitoid gneiss . . . . .	58 J/12	51
Shayalapatti, granitoid gneiss. . . . .	58 K/2	51
Sivaganga, sandstone . . . . .	58 K/5	51
Tirumal, marble . . . . .	58 K/2	51
Tiruparai-kundram, granitoid gneiss . . . . .	58 K/1	51
Tirushalai, banded gneiss . . . . .	58 K/2	51
Veigei R., gold . . . . .	58 F/16	208
<b>Malabar, iron . . . . .</b>	..	264
„ laterite . . . . .	..	51
Beypur, iron . . . . .	49 M/16	267
„ lignite . . . . .	„	308
Cannanore, lignite . . . . .	49 M/5	308

	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Malabar—contd.</b>		
Cochin, limestone . . . . .	58 C/1	51
Feruk, iron . . . . .	49 M/16	267
Manarkad, gold . . . . .	49 M/15	208
Nemini, iron. . . . .	58 A/4	267
Nilambar, gold . . . . .	58 A/3	208
„ iron . . . . .	„	266
Porur, iron . . . . .	58 A/8	267
Verkella hill, iron . . . . .	49 M/15	267
Wandur, iron . . . . .	58 A/4	267
Yeddakurichi, iron . . . . .	58 B/9	267
<b>(Wynaad)—</b>		
Cherambadi, mica . . . . .	58 A/6	368
Devala, gold . . . . .	58 A/7	209
„ mica . . . . .	„	368
Gudalur, mica . . . . .	58 A/7	368
Nellakota, mica . . . . .	58 A/6	368
Pandalur, gold . . . . .	58 A/7	209
„ mica . . . . .	„	368
<b>Nellore, apatite . . . . .</b>	..	425
„ garnet . . . . .	..	171
„ manganese . . . . .	..	351
„ saltpetre . . . . .	..	451
Atmakur, mica . . . . .	57 N/10	369
Burapalle, iron . . . . .	57 M/14	267
Chaganum, columbite . . . . .	57 N/12	430
Garimanipenta (Ganipenta), copper . . . . .	57 N/9	127

	SHEET.	PAGE.
<b>MADRAS—<i>contd.</i></b>		
<b>Nellore—<i>contd.</i></b>		
Gogulapalli, copper . . . . .	57 M/7	128
Gudur, mica . . . . .	57 N/16	369
Inikurti, mica . . . . .	57 N/11	369
Jogipalli, steatite . . . . .	57 N/12	463
Kalichedu, mica . . . . .	57 N/11	369
Kaluvaya, potstone . . . . .	5 N/6	463
Kavali, mica . . . . .	57 N/13	369
Konijedu hills, iron . . . . .	57 M/15	237
Kuchupudi hill, granitoid gneiss . . . . .	57 M/11	51
Lakshminarayana, mica . . . . .	57 N/12	369
Maneru R., iron . . . . .	66 A/4	268
Mangalpur, mica . . . . .	—	369
Manikesavaram, iron . . . . .	57 M/13	167
Narravada, barytes . . . . .	57 N/5	19
Ongole, iron . . . . .	66 A/2	267
Pallimitta, mica . . . . .	57 N/1	369
Parnametta hill, iron . . . . .	66 A/2	267
Polenane Cheruvu, iron . . . . .	57 M/12	268
Rappala Dibba, mica . . . . .	—	369
Rapur, mica . . . . .	57 N/1	369
Saidapuram, potstone . . . . .	57 N/1	463
Sankara, mica . . . . .	57 N/15	369
„ samarskite . . . . .	„	431
Santaravur, gypsum . . . . .	66 A/5	227
Singarikonda, iron . . . . .	57 M/13	267
Swarnamukhi R., iron . . . . .	57 O/13	268

	SHEET.	PAGE.
<b>MADRAS—<i>contd.</i></b>		
<b>Nellore—<i>contd.</i></b>		
Tellabodu, mica . . . . .	57 N/12	369
Udayagiri Taluk, iron . . . . .	57 N/5	264
Vemparala, iron . . . . .	57 M/13	267
Nilgiri, gneiss . . . . .	..	52
„ peat . . . . .	..	397
Dodabetta, iron . . . . .	58 A/11	268
„ kaolin . . . . .	„	288
Jackatalla (Wellington), iron . . . . .	58 A/15	268
Karachola, iron . . . . .	58 A/15	268
Kotagiri, iron . . . . .	58 A/15	264
Moyar R., iron . . . . .	58 A	264
Ootacamund, bauxite . . . . .	58 A/11	21
„ manganese . . . . .	„	351
„ ochre . . . . .	„	395
Seven Cairns hill, garnet . . . . .	58 A/11	171
<b>Pudukotai—</b>		
Ayangudi, iron . . . . .	58 J/15	268
Kunamulla, granitoid gneiss . . . . .	58 J/14	52
Mallampatti, iron . . . . .	58 J/10	268
Shahkotai, laterite . . . . .	58 J/16	52
Shenkarai „ . . . . .	58 J/15	52
Tirkonum, granitoid gneiss . . . . .	58 J/15	52
Trimiem „ „ . . . . .	58 J/16	52
Virallimalai „ „ . . . . .	58 J/10	52
<b>Ramnad—</b>		
Pantalagudi, limestone . . . . .	58 K/3	52

	SHEET.	PAGE.
<b>MADRAS—<i>contd.</i></b>		
<b>Rannad—<i>contd.</i></b>		
Rameswaram, sandstone . . . . .	58 O/7	52
Valimukkam „ . . . . .	58 K/12	52
Salem, asbestos . . . . .	..	16
„ iron . . . . .	..	264
„ sulphate of magnesia . . . . .	..	468
Alangayam, barytes . . . . .	57 L/14	19
Arasiramani, mica . . . . .	58 E/14	369
Attur, iron . . . . .	58 I/10	270
Baramahal, soda . . . . .	—	455
Chalk hills, chromite . . . . .	58 I/2	63
„ „ magnesite . . . . .	„	313
Chinnamali, mica . . . . .	58 E/14	369
Chintalakuttai, corundum . . . . .	57 L/6	141
Dharmapuri, corundum . . . . .	57 L/4	141
Donnakittahalli, corundum . . . . .	57 II/16	141
Erumaipatti, potstone . . . . .	58 I/8	463
Ettapur, iron . . . . .	58 I/6	269
Godamalai, iron . . . . .	58 I/6	268
Icdapadi, mica . . . . .	58 E/14	369
Iswaramalai, magnesite . . . . .	58 I/6	314
Kanavaipatti hill, iron . . . . .	58 I/4	269
Kanjanalai, cerium . . . . .	58 I/2	429
„ chromite . . . . .	„	64
„ iron . . . . .	„	269
„ magnesite . . . . .	„	314
Karuppur, chromite . . . . .	„	64

	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Salem—contd.</b>		
Karuppur, potstone . . . . .	58 I/2	463
Kirambur, iron . . . . .	58 I/4	269
Kolimalai, iron . . . . .	58 I/7	269
Mahanpolliam, limestone . . . . .	58 E/15	52
Mallikarai, iron . . . . .	58 I/6	270
Mondakuli, iron . . . . .	57 L/12	268
Naiamalai, iron . . . . .	—	268
Nainamalai, iron . . . . .	58 I/3	269
Namagiripetta, iron . . . . .	58 I/7	270
Pailam, iron . . . . .	58 I/7	269
Paithurmalai, iron . . . . .	58 I/10	270
Palampatti, iron . . . . .	58 E/14	270
Paparapatti, corundum . . . . .	57 L/4	141
Pavittiram, magnesite . . . . .	58 I/8	314
Rengopuram, corundum . . . . .	57 H/16	141
Sankeridrug, garnet . . . . .	58 E/15	171
Shattambur, limestone . . . . .	58 I/3	52
Sholasigamani, ruby . . . . .	58 E/16	181
Shoragamalli (? Suramangalam), potstone . . . . .	58 I/2	463
Singapatti (Singapuram), iron . . . . .	58 I/6	269
Sittampundi, corundum . . . . .	58 E/16	141
Taltuki, iron . . . . .	58 I/9	269
Tammampatti, iron . . . . .	58 I/7	269
Tandagundapalaiyam (Tandakavundanpalaiyam), steatite . . . . .	58 I/6	463
Tattaiyangarpettai, iron . . . . .	58 I/8	269
Thalaimalai, iron . . . . .	58 I/8	269

	SHEET.	PAGE.
<b>MADRAS—<i>contd.</i></b>		
<b>Salem—<i>contd.</i></b>		
Thirtamalai, iron . . . . .	57 L/12	269
Valaiyapatti (Mutunaikkenpatti), magnesite . . . . .	58 I/4	314
Vellalapatti, iron . . . . .	58 I/3	269
Viralimodos, ruby . . . . .	—	181
<b>South Kanara—</b>		
Bandar, corundum . . . . .	48 P/5	142
Baswaraj Drug, iron . . . . .	48 J/7	264
Bular R., kaolin . . . . .	48 L/13	288
Ellenir, corundum . . . . .	—	142
Hirebandady, corundum . . . . .	48 P/5	142
Kadikar, corundum . . . . .	—	142
Kemmar, corundum . . . . .	48 P/5	142
Malekai, corundum . . . . .	48 P/9	142
Manavalike, steatite . . . . .	48 P/5	463
<b>Tanjore—</b>		
Vallam, rock crystal . . . . .	56 N/2	177
<b>Tinnevely, iron . . . . .</b>	..	264
„ monazite . . . . .	..	390
Kudungkulam, sandstone . . . . .	58 H/12	52
Mel Amathur, garnet . . . . .	58 G/14	172
Panamparai, sandstone . . . . .	58 H/15	52
Papanassam, graphite . . . . .	58 H/6	221
Shenkotai, limestone . . . . .	58 K/3	52
Thissianvillai (Teggayanvella), sandstone . . . . .	58 H/15	52
Tinnevely, graphite . . . . .	58 H/10	221

	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Tinnevely—contd.</b>		
Vedanattam, sandstone . . . . .	58 L/1	52
Vikersingam, graphite . . . . .	58 H/6	221
Waddukarai, gneiss . . . . .	58 G/15	52
<b>Travancore, garnet . . . . .</b>	..	172
Amanad, graphite . . . . .	—	222
Anjengo, alum . . . . .	58 D/14	6
„ monazite . . . . .	„	390
Appiyode, zircon . . . . .	58 H/4	185
Aramboly, graphite . . . . .	58 H/11	222
Arumanallur, cobalt . . . . .	58 H/7	112
„ graphite . . . . .	„	222
„ molybdenum . . . . .	„	389
„ nickel . . . . .	„	392
„ pyrrhotite . . . . .	„	474
Attapalam, graphite . . . . .	—	222
Attungal, graphite . . . . .	58 D/14	222
Avannesswaram, graphite . . . . .	58 C/16	222
Cape Comorin, ilmenite . . . . .	58 H/12	432
„ „ monazite . . . . .	„	390
Islandimangalam, monazite . . . . .	58 H/7	391
Karungal, graphite . . . . .	—	222
Kavitan Kudal, graphite . . . . .	—	221
Kinpallikonum, graphite . . . . .	58 D/14	222
Kolachel, graphite . . . . .	58 H/8	222
Kovilam, monazite . . . . .	58 D/15	390
Kulatori, graphite . . . . .	58 D/14	221



	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Travancore—contd.</b>		
Kurinji, mica . . . . .	58 C/9	370
Liparum, monazite . . . . .	58 H/8	390
Mamalai, graphite . . . . .	—	222
Melmadangu, graphite . . . . .	—	222
Munnumbur, graphite . . . . .	58 D/14	222
Muttum, monazite . . . . .	58 H/8	390
Nindikarai, monazite . . . . .	58 D/9	390
Panilal, graphite . . . . .	58 H/2	221
Pathanapuram, graphite . . . . .	58 C/16	222
Peralimuttum, graphite . . . . .	—	222
Pudur, monazite . . . . .	58 H/8	390
Punalur, graphite . . . . .	58 C/16	222
Shenkotta, iron . . . . .	58 H/8	264
Shorlacode, graphite . . . . .	58 H/7	222
Thiruvella (Teruwulla), cordierite . . . . .	58 C/11	173
Tipperamalai, mica . . . . .	—	370
Tolicode, mica . . . . .	58 H/4	370
Trivandrum, graphite . . . . .	58 D/15	221
Udagiri, iron . . . . .	58 H/8	264, 271
Vellanad, graphite . . . . .	58 H/2	223
„ monazite . . . . .	„	391
Warkalli, alum . . . . .	58 D/10	6
„ lignite . . . . .	„	308
„ monazite . . . . .	„	390
„ sandstone . . . . .	„	53
„ vanadium . . . . .	„	433

	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Trichinopoly—</b>		
Coothoor (Kuttur) pottery clay . . . . .	58 M/4	288
Kadavur, rutile . . . . .	58 J/2	432
„ tungsten . . . . .	„	487
Kajaripatti, magnesite . . . . .	58 I/8	314
Kannanur, potstone . . . . .	58 I/12	463
Kauray, kaolin . . . . .	58 I/16	289
„ ochre . . . . .	„	395
Kila Kanavai pass, iron . . . . .	58 I/16	271
Kiranur, iolite . . . . .	58 J/5	173
Maravattur, gypsum . . . . .	58 I/16	228
Musiri, magnesite . . . . .	58 J/5	314
„ potstone . . . . .	„	463
Mutum, limestone . . . . .	58 I/12	53
Naivaili, limestone . . . . .	58 J/9	53
Olapadi, copper . . . . .	58 M/3	129
Pachaimalai, iron . . . . .	58 I/11	271
Perany, kaolin . . . . .	58 I/16	289
„ ochre . . . . .	„	395
Semmalai hills, tantalite . . . . .	58 J/6	430
Tirampalaiyam, magnesite . . . . .	58 J/9	315
Tiruppangali, magnesite . . . . .	58 J/9	315
Udaiyapatti, iolite . . . . .	58 J/1	173
Ururarkarad, tungsten . . . . .	—	487
Utacoil, pottery clay . . . . .	58 M/4	288
Utatur, gypsum . . . . .	58 I/16	228
Valayapaddi, calcareous grit . . . . .	58 M/3	53

	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Trichinopoly—contd.</b>		
Valikandapuram, magnesite . . . . .	58 I/15	315
Vapur, copper . . . . .	58 D/3	129
Varakpadi, calcareous grit . . . . .	58 I/16	53
Vellar R., basalt . . . . .	58 M/3	53
Vemmany, pottery clay . . . . .	58 M/4	288
Yedichicolum, magnesite . . . . .	—	314
Yelambalur hill, iron . . . . .	58 I/15	271
<b>Vizagapatam, cordierite . . . . .</b>	..	173
„ iron . . . . .	..	264
Attemvalsa, manganese . . . . .	65 N/11	354
Avagudem, manganese . . . . .	65 N/11	354
Baidapilli, manganese . . . . .	—	355
Bajuvalsa, manganese . . . . .	—	355
Batuva, manganese . . . . .	65 N/11	355
Bimlipatam, monazite . . . . .	65 O/5	391
Boddam, manganese . . . . .	65 N/11	355
Bondapilli, manganese . . . . .	65 N/11	354
Butharayavalsa, manganese . . . . .	65 N/7	355
Challapuram, manganese . . . . .	65 N/7	355
Chinna Palavalsa, manganese . . . . .	—	355
Chinna Ranyan, manganese . . . . .	65 N/7	355
Chintelavalsa, manganese . . . . .	65 N/3	354
Chipurapalli, manganese . . . . .	65 N/11	351, 355
Dannanapota, manganese . . . . .	65 N/12	355
Devada, apatite . . . . .	65 N/11	156, 425
„ manganese . . . . .	„	353

	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Vizagapatam—contd.</b>		
Devarapilli, manganese . . . . .	65 N/12	355
Gadabavalsa, manganese . . . . .	65 N/11	355
Gadasam, manganese . . . . .	65 N/7	354
Galikonda, garnet . . . . .	65 K/6	172
Garbham, apatite . . . . .	65 N/7	425
„ manganese . . . . .	„	353
Garraraju Chipurupalli, manganese . . . . .	65 N/11	354
Girliguma, bauxite . . . . .	65 J/14	21
Gotmandi, manganese . . . . .	65 N/11	351
Govindapuram, manganese . . . . .	65 N/11	353
Gumadam, manganese . . . . .	65 N/11	355
Gunpam, manganese . . . . .	65 N/12	355
Itakerlapilli, manganese . . . . .	65 N/12	353
Jada, manganese . . . . .	—	355
Kasipuram, graphite . . . . .	65 N/4	223
Kodur, antimony . . . . .	65 N/11	12
„ apatite . . . . .	„	156
„ manganese . . . . .	„	351, 352
„ opal . . . . .	„	175
„ rose quartz . . . . .	„	177
Kondapalem, manganese . . . . .	65 N/11	355
Kotakarra, manganese . . . . .	65 N/7	354
„ opal . . . . .	„	176
Kothavalsa, manganese . . . . .	65 O/1	355
Kottapeta, manganese . . . . .	—	355
Lakshmipuram, manganese . . . . .	65 N/11	355

	SHEET.	PAGE.
<b>MADRAS—<i>contd.</i></b>		
<b>Vizagapatam—<i>contd.</i></b>		
Lingalavalsa, manganese . . . . .	65 N/11	355
Madgul, iron . . . . .	65 K/13	272
Mukkunarasannapeta, manganese . . . . .	—	355
Mulagam, manganese . . . . .	65 N/12	353
Naiduvalsa, manganese . . . . .	65 N/2	355
Narainapatam, iron . . . . .	65 N/1	272
Nellimarla, manganese . . . . .	65 N/8	355
Nimmalavalsa, manganese . . . . .	65 N/11	355
Perapi, manganese . . . . .	65 N/11	353
Perumali, manganese . . . . .	65 N/11	354
Ramabhadrapuram, apatite . . . . .	65 N/7	425
„ manganese . . . . .	„	354
Ramachandrapuram, manganese . . . . .	65 N/7	351
Ravivalsa, manganese . . . . .	65 N/11	355
Regati, manganese . . . . .	—	355
Salur, graphite . . . . .	65 N/2	223
Sandanandapuram, rose quartz . . . . .	65 N/12	177
Sarveswarapuram, manganese . . . . .	—	355
Sivandhoravalsa, manganese . . . . .	65 N/7	355
Sivaram, manganese . . . . .	65 N/11	353
Sokarapalem, manganese . . . . .	65 N/11	355
Tadura, manganese . . . . .	65 N/3	354
Vedullavalsa, manganese . . . . .	65 N/11	355
Viswanadhapuram, manganese . . . . .	65 N/2	355
Vizianagram, kaolin . . . . .	65 N/8	289
Viziarampuram, manganese . . . . .	65 N/8	355

	SHEET.	PAGE.
<b>MADRAS—contd.</b>		
<b>Vizagapatam—coned.</b>		
Waltair, mica . . . . .	65 O/6	370
„ monazite . . . . .	„	391
<b>(Jeypore)—</b>		
Bagchua, iron . . . . .	65 I/8	272
Chitra „ . . . . .	65 I/8	272
Kolar, potstone . . . . .	65 J/6	464
Kondajori, limestone . . . . .	65 J/5	53
Malsama, iron . . . . .	65 I/4	272
Modpodor, iron . . . . .	65 J/5	272
„ potstone . . . . .	„	464
Noapur, potstone . . . . .	65 J/9	464
Ontagaon, potstone . . . . .	65 J/9	53, 464
<b>MYSORE, salt . . . . .</b>	..	439
<b>Bangalore, manganese . . . . .</b>	..	356
„ pottery clay . . . . .	..	289
Avilhalli, asbestos . . . . .	57 H/9	16
Banerkotta, corundum . . . . .	57 H/9	142
Bangalore, mineral water . . . . .	57 H/9	384
Golhalli, fire-clay . . . . .	57 G/8	149
Hoshalli, corundum . . . . .	57 G/7	142
Hulkunte „ . . . . .	57 G/7	142
Kodihalli „ . . . . .	57 G/8	142
Masti, columbite . . . . .	57 L/1	430
Severndrug (Savandurga), iron . . . . .	57 H/5	272
Tinnalu, brick-clay . . . . .	57 G/12	289

	SHEET.	PAGE.
<b>MYSORE—contd.</b>		
<b>Chitaldroog—</b>		
Andanur, potstone . . . . .	57 B/4	404
Anivala, soda . . . . .	57 C/1	435
Annesidri, gold . . . . .	57 C/9	215
Belligudda, copper . . . . .	57 B/7	129
Bodinuradi hill, manganese . . . . .	57 C/5	357
Chik Bayalkere, iron . . . . .	57 C/10	273
Chikkannanahalli, antimony . . . . .	57 B/7	12
Chitaldroog, granite . . . . .	57 B/8	54
„ pottery clay . . . . .	„	289
„ silver-lead . . . . .	„	301
Dodkittadahalli, iron . . . . .	57 C/5	273
„ manganese . . . . .	„	357
Gangigere, asbestos . . . . .	57 C/6	17
Gattihoshalli, iron . . . . .	57 C/5	273
Halekalgudda, gold . . . . .	57 B/3	210
Honnamaradi, gold . . . . .	57 B/7	210
Iplara hills, manganese . . . . .	57 C/5	357
Javangondanahalli, gold . . . . .	57 C/9	215
„ limestone . . . . .	„	54
Jugalur, chloritic schist . . . . .	57 B/8	54
„ pottery clay . . . . .	„	289
Karubarmaradikere, silver-lead . . . . .	57 B/8	301
Kenchammanahalli, soda . . . . .	—	186
Kotemaradi, gold . . . . .	57 B/7	210
Madadkere, manganese . . . . .	57 C/5	357
Malla Bennur, gold . . . . .	48 N/11	211

	SHEET.	PAGE.
<b>MYSORE—contd.</b>		
<b>Chitaldroog—contd.</b>		
Mattod, glass-making materials . . . . .	57 C/5	186
Molakelmuru, glass-making materials . . . . .	57 B/10	186
Munisinganagudda, manganese . . . . .	57 C/5	357
Nelabaigudda, gold . . . . .	57 C/9	211
Sadarhalli, manganese . . . . .	57 B/4	356
Uchingi Drug, potstone . . . . .	57 B/14	464
<b>Hassan—</b>		
Agrahar, corundum . . . . .	57 C/8	143
Arsikere, chromite . . . . .	57 C/7	64
Belgumba, corundum . . . . .	57 C/8	143
Belvadi, green quartzite . . . . .	48 O/15	54
Chennarayapatna, amphibolite . . . . .	57 D/5	55
Chikkanhalli, mica . . . . .	57 D/5	370
Ennahole Rangappanbetta, magnesite . . . . .	57 D/5	315
Gollarahalli, gold . . . . .	57 C/8	211
Gollarhoshalli (Golushalli), corundum . . . . .	57 D/5	142, 143
Hagare, corundum . . . . .	48 O/16	143
Halebid, potstone . . . . .	48 O/16	464
Hole Narsipur, corundum . . . . .	57 D/1	143
Idegondanahalli, asbestos . . . . .	57 D/6	17
Jalgaranhalli, gold . . . . .	57 C/8	211
Kabbur, asbestos . . . . .	57 D/6	17
Kalkairi, corundum . . . . .	57 D/5	142
Karadihalli, gold . . . . .	57 C/7	211
Kempinkot, gold . . . . .	57 D/5	211
Mallanhalli, gold . . . . .	57 C/8	211



	SHEET.	PAGE.
<b>MYSORE—contd.</b>		
<b>Hassan—contd.</b>		
Nagenhalli, corundum . . . . .	57 C/4	143
Nuggihalli, chromite . . . . .	57 C/8	64
„ gold . . . . .	„	211
Tellavari, gold . . . . .	57 C/7	211
<b>Kadur—</b>		
Ajjampur, gold . . . . .	57 C/2	211
Attigundi, iron . . . . .	48 O/11	273
Baba Budan hills, antimony . . . . .	48 O/11	13
„ „ iron . . . . .	„	273
Byrladhalli, corundum . . . . .	57 C/3	143
Chikmagalur, gold . . . . .	48 O/15	211
Kadamane, corundum . . . . .	48 O/7	143
„ ruby . . . . .	„	181
Kannikalmatti hill, manganese . . . . .	48 O/13	357
Kikri, mica . . . . .	48 O/7	370
Mudasosi, asbestos . . . . .	48 O/12	17
Mudegere, asbestos . . . . .	48 O/12	17
Nandi, gold . . . . .	48 O/14	212
Sakkarepatna, potstone . . . . .	48 O/15	464
Sindagere, green quartzite . . . . .	48 O/15	54
Sunkurdi, corundum . . . . .	48 O/7	143
Tarikere, gold . . . . .	48 O/14	212
Ubrani, iron . . . . .	48 O/13	273
„ manganese . . . . .	„	357
Virupakshikan hill, iron . . . . .	48 O/10	273
<b>Kolar, gold . . . . .</b>	..	217

	SHEET.	PAGE.
<b>MYSORE—contd.</b>		
<b>Kolar—contd.</b>		
„ 'platinum . . . . .	..	427
Bevinhalli, corundum . . . . .	57 G/7	143
Bowringpet, corundum . . . . .	57 L/1	143
Kamasandra, corundum . . . . .	57 L/1	143
Korlapati, corundum . . . . .	57 G/14	143
Machenhalli, corundum . . . . .	57 G/6	143
Marikuppum, gold . . . . .	57 L/5	212
Sidili, corundum . . . . .	57 G/14	143
<b>Mysore—</b>		
Ankanhalli, corundum . . . . .	57 D/7	143
Arakere, gold . . . . .	57 D/15	214
Arsinkere, corundum . . . . .	57 H/2	143
Bannikuppe, corundum . . . . .	57 D/7	143
Basaralu, corundum . . . . .	57 D/14	143
Basvanhalli, corundum . . . . .	57 D/15	143
Bellibetta, gold . . . . .	57 D/6	214
Bellundigere, corundum . . . . .	57 D/14	143
Bidarhallibundi, corundum . . . . .	57 D/15	143
Bommanhalli, corundum . . . . .	57 D/11	143
Budihoskote, corundum . . . . .	57 D/11	144
Bugathalli, corundum . . . . .	57 H/3	144
Butgahalli, corundum . . . . .	57 D/15	144
Chattanhalli, corundum . . . . .	57 D/12	144
Chaudanhalli, corundum . . . . .	57 D/6	144
Chetanhalli, iron . . . . .	57 H/3	274
Chettanhalli, beryl . . . . .	57 D/10	157

	SHEET.	PAGE.
<b>MYSORE—contd.</b>		
<b>Mysore—contd.</b>		
Chik Bichanhalli, corundum . . . . .	57 D/7	144
Chinkere, gold . . . . .	—	214
Dharmapur, corundum . . . . .	57 D/8	144
Gangana Chakki, iron . . . . .	57 H/3	274
„ „ limestone . . . . .	„	54
Golambede, corundum . . . . .	—	144
Gumsihalli, corundum . . . . .	57 D/8	144
Gurdevarhalli, corundum . . . . .	57 H/2	144
Hulalgur, iron . . . . .	57 H/3	274
Holgere (Valgere), gold . . . . .	57 D/12	214
Honnabetta, gold . . . . .	57 D/9	215
Honnemuda, gold . . . . .	57 D/10	215
Hullahalli, iron . . . . .	57 H/3	274
Hunsur, corundum . . . . .	57 D/7	144
Husugur, iron . . . . .	57 H/3	274
Kabbal, chromite . . . . .	57 D/5	65
Kadakola, chromite . . . . .	57 D/12	65
„ magnesite . . . . .	„	315
Kalinganahalli, gold . . . . .	57 D/13	215
Kampagowd Koppal, corundum . . . . .	57 D/15	144
Kaniyanbundi Hosur, corundum . . . . .	57 D/12	144
Karalkatti, iron . . . . .	57 H/3	274
Karigatta hill, porphyry . . . . .	57 D/11	54
Karimuddehalli, gold . . . . .	57 D/8	215
Kiragandur, corundum . . . . .	57 D/14	144
Krishnarajpet, chromite . . . . .	57 D/6	65

	SHEET.	PAGE.
<b>MYSORE—contd.</b>		
<b>Mysore—contd.</b>		
Kuganpur, asbestos . . . . .	—	17
Kupya, corundum . . . . .	57 D/15	144
„ magnesite . . . . .	„	315
„ mica . . . . .	„	370
Linghapur, corundum . . . . .	57 D/6	144
Maddur, iron . . . . .	57 H/2	274
Madgahalli, corundum . . . . .	57 D/15	144
Mandya, asbestos . . . . .	57 D/14	17
„ soda . . . . .	„	455
Manikpur, corundum . . . . .	57 D/11	144
Mariyanhundi, corundum . . . . .	57 D/7	144
Mavinhalli, chromite . . . . .	57 D/12	65
„ magnesite . . . . .	„	315
Melkote, beryl . . . . .	57 D/10	157
„ kaolin . . . . .	„	289
Musanbayanhalli, potstone . . . . .	57 D/7	464
Nadappanahalli, corundum . . . . .	57 D/7	144
„ gold . . . . .	„	215
Nagamangala, asbestos . . . . .	57 D/13	17
Nagval, magnesite . . . . .	57 D/11	315
Narankere, porphyry . . . . .	57 D/15	54
Nolimakanhalli, corundum . . . . .	57 H/3	144
Nughalli, corundum . . . . .	57 D/11	144
Punjur, corundum . . . . .	58 E/1	144
Pura, corundum . . . . .	57 D/15	144
Ramanahalli, corundum . . . . .	57 D/11	144

	SHEET.	PAGE.
<b>MYSORE—contd.</b>		
<b>Mysore—contd.</b>		
Ramnampur, corundum . . . . .	—	144
Sannakikoppal, corundum . . . . .	57 D/15	144
Sargur, corundum . . . . .	57 D/7	144
„ iron . . . . .	„	274
Satnur, corundum . . . . .	57 D/14	144
Shenapatahalli, corundum . . . . .	57 D/15	145
Shibenhalli, corundum . . . . .	57 H/2	145
Shinduvalli, chromite . . . . .	57 D/12	65
Sidlingapur, porphyry . . . . .	57 D/11	54
Singamarnahalli, corundum . . . . .	57 D/8	145
Sonnahalli, gold . . . . .	57 D/8	215
Tadgavadi, porphyry . . . . .	57 D/15	54
Taghalli, corundum . . . . .	57 D/15	145
Talur, potstone . . . . .	57 D/12	464
Tarasanhalli, corundum . . . . .	57 D/14	145
Tarvalli, corundum . . . . .	57 D/16	145
Tippur, corundum . . . . .	57 H/2	145
„ iron . . . . .	„	274
Turganur, porphyry . . . . .	57 D/15	54
Undivadi, mica . . . . .	57 D/11	370
Vaddar Hoshalli, corundum . . . . .	57 D/7	145
Virasimudra (Vadesamudra), mica . . . . .	57 D/10	370
Waddarpakuiya, corundum . . . . .	57 D/15	145
Yelchodi, corundum . . . . .	57 D/7	145
Yelwal, chromite . . . . .	57 D/11	64
Yerahalli, corundum . . . . .	57 D/14	145

	SHEET.	PAGE.
<b>MYSORE—contd.</b>		
<b>Mysore—contd.</b>		
Yerekalmonti, corundum . . . . .	57 D/11	145
<b>Shimoga, iron . . . . .</b>	..	274
Aladhalli, manganese . . . . .	48 N/12	359
Ballur, manganese . . . . .	48 N/11	358
Bikonhalli, manganese . . . . .	48 N/12	359
Buddamatti peak, manganese . . . . .	48 O/13	359
Gaddikalmatti, manganese . . . . .	48 O/13	359
Gangur, iron . . . . .	48 O/13	274
„ manganese . . . . .	„	360
Honnagudda, gold . . . . .	48 O/9	215
Honnahatti, gold . . . . .	48 O/9	215
Honnali, gold . . . . .	48 N/12	215
Hoshalli, manganese . . . . .	48 O/13	359
Itigehalli, manganese . . . . .	48 N/8	358
Kanjiganagutti, manganese . . . . .	48 O/13	360
Kavaledurga, potstone . . . . .	48 O/2	464
Kudrikonda, gold . . . . .	48 N/12	215
Kumsi, manganese . . . . .	48 N/8	358
Nagalagutti, manganese . . . . .	48 O/13	360
Palvanhalli, gold . . . . .	48 N/12	215
Sagar Taluk, ochre . . . . .	48 N/4	395
Shankargudda, manganese . . . . .	48 O/5	359
Shiddarhalli, iron . . . . .	48 O/13	274
Sorab Taluk, ochre . . . . .	48 N/3	395
Sulekere, manganese . . . . .	48 N/16	359
Tirandur (? Todur), manganese . . . . .	48 O/6	359

	SHEET.	PAGE.
<b>MYSORE—contd.</b>		
<b>Shimoga—contd.</b>		
Tuppur, manganese . . . . .	48 N/8	358
Urumanjamatti, manganese . . . . .	48 O/13	360
<b>Tumkur, iron . . . . .</b>	..	275
Chiknayakanhalli, gold . . . . .	57 C/11	215
Harenhalli, manganese . . . . .	57 C/11	361
Hattyal, manganese . . . . .	57 C/11	361
Honnebagi, manganese . . . . .	57 C/11	360
Hoshalli, manganese . . . . .	57 C/11	360
Huliyar, iron . . . . .	57 C/10	273
Kadehalli, amphibolite . . . . .	57 C/16	54
Karekurchi, manganese . . . . .	57 C/11	361
Kondli, manganese . . . . .	57 C/11	360
Kortagero Taluk, corundum . . . . .	57 G/2	145
Kunigal Taluk, corundum . . . . .	57 G/4	145
Maddagiri Taluk, corundum . . . . .	57 G/2	145
Mavinhalli, manganese . . . . .	57 C/11	360
Muskondli, manganese . . . . .	57 C/11	361
Nerlaguddi, limestone . . . . .	57 C/10	55
Pavagada Taluk, corundum . . . . .	57 F/8	145
Shidasandra, manganese . . . . .	57 C/11	360
Sira Taluk, corundum . . . . .	57 C/14	145
Sondenhalli, manganese . . . . .	57 C/11	360
Voblapur, limestone . . . . .	57 G/3	55
<b>NEPAL, alum . . . . .</b>	..	6
Etaunda, lignite . . . . .	72 E/3	308

	SHEET.	PAGE.
<b>NEPAL—<i>contd.</i></b>		
Gorli Kharak, iron . . . . .	—	275
Isma, corundum . . . . .	—	145
Kachipatar Argah, cobalt . . . . .	—	113
Kathmandu, antimony . . . . .	72 E/6	13
„ copper . . . . .	„	129
„ lignite . . . . .	„	308
„ peat . . . . .	„	397
„ vivianite . . . . .	„	424
Katwaldar gorge, peat . . . . .	72 E/2	397
Musikot, corundum . . . . .	—	145
Sisagarhi, copper . . . . .	72 E/2	129
<b>NICOBAR ISLANDS, lignite.</b> . . . .	..	308
<b>NORTH-WEST FRONTIER PROVINCE—</b>		
<b>Bajaur—</b>		
Baraul, iron . . . . .	—	275
Jandawal hills, iron . . . . .	—	275
Laspur hills, iron . . . . .	—	275
Panjhora R., gold . . . . .	38 N	215
Swat R., gold . . . . .	38 N	215
<b>Bannu—</b>		
Bannu, iron . . . . .	38 L/9	275
Chitral, arsenic . . . . .	..	15
<b>Dera Ismail Khan—</b>		
Paniala, gypsum . . . . .	38 L/16	228
Saiduwali, gypsum . . . . .	38 P/4	228



	SHEET.	PAGE.
<b>NORTH-WEST FRONTIER PROVINCE—<i>contd.</i></b>		
<b>Hazara, building materials</b> . . . . .	..	55
Abbotabad, limestone . . . . .	43 F/4	55
Bandi Munim, lead . . . . .	43 G/5	302
Bari-ka-Bugla, gypsum . . . . .	43 F/8	228
Bijora, gypsum . . . . .	43 F/8	228
Doro R., coal . . . . .	43 F/8	107
Dowatta, gypsum . . . . .	43 F/7	228
Kakal ravine, silver-lead . . . . .	43 F/7	302
Khagan R., kaolin . . . . .	43 F	289
Lalo Gali, gold . . . . .	43 B/15	216
Sirban hill, iron . . . . .	43 F/4	275
Ugri, lead . . . . .	43 F/2	302
<b>Kohat, building materials</b> . . . . .	..	55
Bahadur Khel, gypsum . . . . .	38 K/16	228
„ „ salt . . . . .	„	440
Burburra, salt . . . . .	38 O/3	441
Dhand, coal . . . . .	38 O/8	108
Gunjalli, sulphur . . . . .	38 O/15	474
Jatta, salt . . . . .	38 O/7	441
Kharuk, salt . . . . .	38 O/4	441
Kohat, coal . . . . .	38 O/6	108
Kurar, salt . . . . .	38 O/8	441
Luni-ki-kassi, sulphur . . . . .	38 O/14	474
Malgin, salt . . . . .	38 O/11	441
Nari, salt . . . . .	38 O/4	441
Nundrukki, salt . . . . .	38 O/11	441
Panoba, petroleum . . . . .	38 O/14	420

	SHEET.	PAGE.
<b>NORTH-WEST FRONTIER PROVINCE—<i>contd.</i></b>		
<b>Kohat—<i>contd.</i></b>		
Panoba, sulphur . . . . .	38 O/14	474
Shin Dhand, coal . . . . .	38 O/10	108
Sirraikhwa, salt . . . . .	38 O/4	441
Surdag, celestite . . . . .	38 K/16	469
Tajut hill (Taghoot Sir), manganese . . . . .	38 O/2	361
Zaino, salt . . . . .	38 O/11	441
Zertangi, gold . . . . .	38 O/11	216
<b>Kurram</b>		
Zaimukht hills, antimony . . . . .	38 K/10	13
<b>Shirani—</b>		
Domanda, sulphur . . . . .	39 I/2	474
Moghal Kot, coal . . . . .	39 I/3	108
„ „ petroleum . . . . .	„	420
Zor Shahr, gypsum . . . . .	39 I/2	228
<b>Waziristan—</b>		
Kaniguram, asbestos . . . . .	38 H/14	17
„ iron . . . . .	„	275
Miran Shah, iron . . . . .	38 L/1	275
Pir Karal, coal . . . . .	38 H/10	108
<b>PONDICHERRY—</b>		
Aranganur, lignite . . . . .	58 M/9	308
Behour „ . . . . .	58 M/9	308
Koniakovil, lignite . . . . .	58 M/13	308
Valudayur, phosphate of lime . . . . .	58 M/9	425
<b>PUNJAB, saltpetre . . . . .</b>	„	451

	SHEET.	PAGE.
<b>PUNJAB—<i>contd.</i></b>		
<b>Ambala—</b>		
Kalka, lignite . . . . .	53 B/13	309
<b>Attock—</b>		
Ankur R., gold . . . . .	43 C/4	216
Borari, petroleum . . . . .	43 C/10	421
Chak Dalla, petroleum . . . . .	43 C/6	421
Chharat, petroleum . . . . .	43 C/10	421
Choi, coal . . . . .	43 C/2	108
Gabir R., gold . . . . .	43 C/8	216
Gunda (Sudkal), petroleum . . . . .	43 C/10	421
Hassan Abdul, limestone . . . . .	43 C/9	55
Indus R., gold . . . . .	38 O	216
Jafar, petroleum . . . . .	43 C/9	422
Khaur, petroleum . . . . .	43 C/8	421
Makhad, gold . . . . .	38 O/12	216
Multan gold . . . . .	43 C/4	216
Naka, gold . . . . .	43 D/5	216
Sadiali (Sadhowali), petroleum . . . . .	38 P/14	422
Sohan R., gold . . . . .	43 C/4	216
Taman, gold . . . . .	43 C/4	216
Trap, gold . . . . .	38 O/16	216
<b>Delhi—</b>		
Kasumpur, kaolin . . . . .	53 H/2	290
<b>Dera Ghazi Khan—</b>		
Gandahari hill, sulphur . . . . .	39 G/12	475
Sangarh pass, sulphur . . . . .	39 J/6	475
Sori pass, sulphur . . . . .	39 J/7	475

	SHEET.	PAGE.
<b>PUNJAB—<i>contd.</i></b>		
<b>Dera Ghazi Khan—<i>contd.</i></b>		
Vadur, fullers' earth . . . . .	39 J/12	151
<b>Gurgaon—</b>		
Aurangpur, rock crystal. . . . .	53 H/7.	177
Bhunsi, mica . . . . .	53 H/3	371
Firozpur, iron . . . . .	54 A/13	276
Kund, slate . . . . .	53 D/8	58
Mahanti, mica . . . . .	—	371
Nuh, salt . . . . .	53 H/4	441
Rewari, slate . . . . .	53 D/12	55
Sohna, gold . . . . .	53 H/4	216
„ graphite . . . . .	„	223
„ mineral water . . . . .	„	385
Sultanpur, salt . . . . .	53 H/4	441
<b>Hoshiarpur, glass-making materials . . . . .</b>	..	187
<b>Jhang—</b>		
Kirana hills, iron . . . . .	44 A/9	276
„ „ manganese. . . . .	„	361
Hundiwala, pyrrhotite . . . . .	44 A/9	475
<b>Jhelum, glass-making materials . . . . .</b>	..	187
Bhaganwala, coal . . . . .	43 H/2	109
Bunhar R., gold . . . . .	43 H/5	216
Dandot, alum . . . . .	43 D/14	6
„ coal . . . . .	„	109
„ phosphate of lime . . . . .	„	425
Jalalpur, gypsum . . . . .	43 H/6	229
Jutana, salt . . . . .	43 H/2	443

	SHEET.	PAGE.
<b>PUNJAB—contd.</b>		
<b>Jhelum—contd.</b>		
Jutana, sandstone . . . . .	43 H/12	56
Kahan R., gold . . . . .	43 H/5	216
Karangli hill, antimony . . . . .	43 H/2	13
„ „ lead . . . . .	„	302
Khowra, lead . . . . .	43 H/2	302
„ potash salts . . . . .	„	428
„ salt . . . . .	„	443
„ sulphate of magnesia . . . . .	„	468
„ sulphate of soda . . . . .	„	469
Makrach, salt . . . . .	43 D/14	443
Nurpur, fullers' earth . . . . .	43 D/10	151
„ potash salts . . . . .	„	428
„ salt . . . . .	„	444
Pidh, coal . . . . .	43 D/14	110
Sardi, gypsum . . . . .	43 D/14	229
„ marble . . . . .	„	56
„ salt . . . . .	„	443
<b>Kangra—</b>		
Bir, iron . . . . .	52 D/12	276
Dharmasala, iron . . . . .	52 D/8	276
„ manganese . . . . .	„	361
Jawala Mukhi, mineral water . . . . .	53 A/5	385
Kanhiara, slate . . . . .	52 D/8	56
Kohad, iron . . . . .	52 D/16	276
Lausa, mineral water . . . . .	52 D/3	385
Mirthal, gold . . . . .	43 P/12	217

	SHEET.	PAGE.
<b>PUNJAB—<i>contd.</i></b>		
<b>Kangra—<i>contd.</i></b>		
Rai, gold . . . . .	43 P/16	217
Tatwani, mineral water . . . . .	52 D/12	385
Tiva (Jiva), mineral water . . . . .	52 D/4	385
<b>(Kulu)—</b>		
Bajaura, iron . . . . .	53 E/1	277
Bashisht, mineral water . . . . .	52 H/3	385
Chisani, copper . . . . .	53 E/1	129
Chong, silver-lead . . . . .	53 E/1	303
Hamta pass, mica . . . . .	52 H/7	371
„ „ sapphire . . . . .	„	182
Jhari, copper . . . . .	52 H/4	129
„ silver-lead . . . . .	„	302
Khanor Khud, silver-lead . . . . .	52 H/8	302
Khelat-(Sita)-Khund, mineral water . . . . .	52 H/4	385
Koman, silver-lead . . . . .	53 E/1	303
Manikarn, mineral water . . . . .	52 H/8	386
„ silver-lead . . . . .	„	302
Maol, copper . . . . .	53 E/1	130
Parbati R., mica . . . . .	52 H/8	371
Samsi, gold . . . . .	53 E/1	217
Saond, copper . . . . .	53 E/1	130
Shatghar copper . . . . .	53 E/1	130
Uchich, silver-lead . . . . .	52 H/8	303
<b>(Lahoul)—</b>		
Shigri, antimony . . . . .	52 H/11	13
„ zinc . . . . .	„	489

	SHEET.	PAGE.
<b>PUNJAB—<i>contd.</i></b>		
<b>Kangra—<i>contd.</i></b>		
(Mandi)—		
Drang, salt . . . . .	53 A/13	445
Guma, salt . . . . .	53 A/13	445
Thirri (Sirhi), bismuth . . . . .	53 E/1	23
„ „ manganese . . . . .	„	361
(Spiti)—		
Dankhar, lead . . . . .	52 L/4	303
Dauksa, ochre . . . . .	52 L/4	396
Gyundi R., gypsum . . . . .	52 H/15	230
Hanlé Chu, chromite . . . . .	52 L/14	65
Muth, iron . . . . .	53 I/1	277
Po, lead . . . . .	52 L/8	303
Lahore, glass-making materials . . . . .	..	187
<b>Mianwali—</b>		
Bakh ravine (Namal), lithographic stone . . . . .	38 P/14	311
„ „ „ mineral water . . . . .	„	386
Basti Algad, petroleum . . . . .	38 P/6	422
Chitta Wahan, sulphate of iron . . . . .	38 P/9	407
Isa Khel, coal . . . . .	38 P/6	110
Jaba, petroleum . . . . .	38 P/9	422
„ sulphur . . . . .	„	475
Kalabagh, alum . . . . .	38 P/9	6
„ coal . . . . .	„	110
„ gypsum . . . . .	„	229
„ lignite . . . . .	„	309
„ rock crystal . . . . .	„	177
„ salt . . . . .	„	445

	SHEET.	PAGE.
<b>PUNJAB—contd.</b>		
<b>Mianwali—contd.</b>		
Kotki, alum . . . . .	38 P/5	6
Kuch, coal . . . . .	38 O/12	110
Malla Khel, coal . . . . .	38 P/1	110
Mari, rock crystal . . . . .	38 P/9	177
Multan, pottery clay . . . . .	...	290
<b>Patiala—</b>		
Baliana, quartzitic sandstone . . . . .	53 D/3	57
Baliari, limestone . . . . .	54 A/1	56
Begopur, quartzite . . . . .	54 A/1	57
Biharipur, marble . . . . .	54 A/1	57
Chhapri, iron . . . . .	54 A/1	277
Datla hill, marble . . . . .	53 D/4	56
Dhani Bathanta, limestone . . . . .	54 A/1	56
Dhanota, iron . . . . .	53 D/4	277
Dhonkora, marble . . . . .	54 A/1	57
Gatasher, mica . . . . .	54 A/1	371
„ rutile . . . . .	„	432
Goela, manganese . . . . .	54 A/1	361
„ marble . . . . .	„	57
Jalanwali, marble . . . . .	54 A/1	57
Khaspur, quartzitic sandstone . . . . .	53 D/4	57
Makandapur, marble . . . . .	54 A/1	57
Mandi hill, marble . . . . .	53 D/4	56
Manjlana, quartzitic sandstone . . . . .	53 D/4	57
Motaka, copper . . . . .	54 A/1	130
Musmuta, mica . . . . .	54 A/1	371



	SHEET.	PAGE.
<b>PUNJAB—contd.</b>		
<b>Patiala—contd.</b>		
Narnaul, kyanite . . . . .	53 D/4	174
Panchnauta, mica . . . . .	54 A/1	371
Pinjaur, mineral water . . . . .	53 B/13	386
Rajawas, quartzitic sandstone . . . . .	53 D/3	57
Sarali, mica . . . . .	54 A/1	371
Sohla, iron . . . . .	53 D/4	277
<b>Rawalpindi—</b>		
Basala, petroleum . . . . .	43 C/14	422
Chirpar hill, petroleum . . . . .	43 C/14	422
Dunga Gali, gypsum . . . . .	43 F/8	230
Landigar, petroleum . . . . .	43 C/14	422
Margala pass, sulphur . . . . .	43 C/14	475
Murree (Clifden), gypsum . . . . .	43 G/5	230
Nerh hill, lignite . . . . .	43 G/10	309
Ratta Hotar (Shah-ki-Nurpur), petroleum . . . . .	43 G/1	423
Sydpur, petroleum . . . . .	43 G/2	423
<b>Shahpur—</b>		
Amb, alum . . . . .	38 P/14	6
Chinnur, petroleum . . . . .	43 D/2	423
Duma, petroleum . . . . .	43 D/2	423
Hangush, petroleum . . . . .	43 D/2	423
Jhakar Kot, coal . . . . .	43 D/6	111
Katha, copper . . . . .	43 D/6	130
„ marble . . . . .	„	56
Sulgi, petroleum . . . . .	38 P/15	423
Tejuwala, coal . . . . .	43 D/6	111

	SHEET.	PAGE.
<b>PUNJAB—contd.</b>		
<b>Shahpur—contd.</b>		
Varaha, marble . . . . .	38 P/15	56
„ salt . . . . .	„	443
Virgal, alum . . . . .	43 D/3	6
<b>Simla—</b>		
Chapla, silver-lead . . . . .	53 F/1	303
Sar, lead . . . . .	53 F/1	303
Simla, building materials . . . . .	53 E/4	57
„ diamond . . . . .	„	170
„ pottery clay . . . . .	„	290
Solan, copper . . . . .	53 F/1	130
Subathu, barytes . . . . .	53 B/13	19
<b>Simla Hill States—</b>		
(Bashahr), kyanite . . . . .	...	174
Chango pass, gypsum . . . . .	53 I/9	230
Changrizang, mineral water . . . . .	52 L/12	386
Jaori, mineral water . . . . .	53 E/14	386
Lipak R., gypsum . . . . .	53 I/9	230
Shalkar, gypsum . . . . .	53 I/9	230
„ sulphate of magnesia . . . . .	„	468
Shele, iron . . . . .	53 E/12	276
Sungnam, copper . . . . .	53 I/5	129
Sutlej R., amethyst . . . . .	53 I	155
„ gold . . . . .	„	217
Wangtu Bridge, beryl . . . . .	53 I/2	156
„ „ fluor-spar . . . . .	„	140
„ „ mica . . . . .	„	371

	SHEET.	PAGE.]
<b>PUNJAB—contd.</b>		
<b>Simla Hill States—contd.</b>		
<b>(Bhañji)—</b>		
Basantpur, lead . . . . .	53 E/4	303
Suni, mineral water . . . . .	53 E/4	386
<b>(Bilaspur)—</b>		
Bhasra, mineral water . . . . .	53 A/12	386
<b>(Dargoti), lead . . . . .</b>	...	303
<b>(Suket)—</b>		
Jauri, gold . . . . .	53 A/15	217
<b>Sirmur—</b>		
Aiyur, silver-lead . . . . .	53 F/9	304
Chaita, iron . . . . .	53 F/5	277
Gumti R., gold . . . . .	53 F/6	217
Lakandi R., iron . . . . .	—	277
Markhanda R., gold . . . . .	53 F/2	217
Nahan, iron . . . . .	53 F/6	277
Silani, lignite . . . . .	53 F/2	309
<b>RAJPUTANA—</b>		
Ajmer-Merwara, garnet . . . . .	..	172
„ „ graphito . . . . .	...	223
Ajmer, copper . . . . .	45 J/11	130
„ fullers' earth . . . . .	„	151
„ iron . . . . .	„	277
„ mica . . . . .	„	371
Bhinai, mica . . . . .	45 J/16	371
Ganeshpura, lead . . . . .	45 J/12	304

	SHEET.	PAGE.
<b>RAJPUTANA—contd.</b>		
<b>Ajmer-Merwara—contd.</b>		
Gugra, copper . . . . .	45 J/10	130
Kalinjar, mica . . . . .	45 K/5	371
Kharwa, manganese . . . . .	45 J/8	362
Kheta Khera, limestone. . . . .	45 J/8	57
Nagpahar, lapis lazuli . . . . .	45 J/11	175
Rajauri (Rajosi), copper . . . . .	45 J/11	130
Rajgarh, copper . . . . .	45 J/11	130
Rawatmal, mica . . . . .	45 K/1	371
Srinagar, opal . . . . .	45 J/15	176
„ quartzite . . . . .	„	57
Suliakhera, mica . . . . .	45 K/1	371
Talana, mica . . . . .	45 J/15	371
Taragarh, barytes . . . . .	45 J/11	20
„ lead . . . . .	„	304
<b>Alwar—</b>		
Baghani, copper . . . . .	—	131
Baldeogarh, marble . . . . .	54 A/8	57
Berla, quartzite . . . . .	54 A/16	57
Bhangarh, copper . . . . .	54 A/8	131
„ iron . . . . .	„	277
„ manganese . . . . .	„	362
„ nickel . . . . .	„	392
Daribo, alum . . . . .	54 A/8	8
„ copper . . . . .	„	131
Dhadakir, marble . . . . .	54 A/10	57
Gudha, lead . . . . .	54 A/7	304

	SHEET.	PAGE.
<b>RAJPUTANA—contd.</b>		
<b>Alwar—contd.</b>		
Indawas (Jodawas), copper . . . . .	54 A/7	131
„ „ silver-lead . . . . .	„	304
Jasingpur, copper . . . . .	54 A/8	131
Jheri, marble . . . . .	54 A/4	57
Kho, marble . . . . .	54 A/8	57
Kushalgarh, copper . . . . .	54 A/7	131
Malakheri, quartzite . . . . .	54 A/11	58
Mandan, flagstone . . . . .	53 D/8	58
Motidongri, marble . . . . .	54 A/10	57
„ rutile . . . . .	„	432
Pertabgarh, copper . . . . .	54 A/4	131
Rajgarh, iron . . . . .	54 A/12	277
„ flagstone . . . . .	„	58
Tasing, copper . . . . .	54 A/1	131
<b>Banswara—</b>		
Itala, manganese . . . . .	46 I/7	362
<b>Bharatpur—</b>		
Basawar, copper . . . . .	54 E/4	131
Bharatpur, salt . . . . .	54 E/8	446
„ sandstone . . . . .	„	58
Dig, salt . . . . .	54 E/7	446
Kumher, salt . . . . .	54 E/7	446
Nithahar, copper . . . . .	54 F/1	131
Rupbas, sandstone . . . . .	54 F/9	58
<b>Bikaner—</b>		
Bhadasar, copper . . . . .	44 L/7	131

	SHEET.	PAGE.
<b>RAJPUTANA—contd.</b>		
<b>Bikaner—contd.</b>		
Dulmera, sandstone . . . . .	44 H/11	58
Lonkara Sar, salt . . . . .	44 H/11	447
Mar (Meth), fullers' earth . . . . .	45 A/13	151
Palana, coal . . . . .	45 E/5	111
„ fullers' earth . . . . .	„	151
<b>Bundi—</b>		
Bhairopura, iron . . . . .	45 O/10	278
Datunda, copper . . . . .	45 O/7	131
„ manganese . . . . .	„	362
<b>Dholpur—</b>		
Kathumri, gypsum . . . . .	54 J/2	227
Kesarbagh, manganese . . . . .	—	326
<b>Dungarpur, apatite . . . . .</b>	„	426
„ magnesite . . . . .	„	315
<b>Jaipur, mica . . . . .</b>	„	371
Amber, flagstone . . . . .	45 N/13	59
Babai, copper . . . . .	45 M/13	131
Buchara, kaolin . . . . .	45 M/14	290
Daraoli, kaolin . . . . .	54 B/13	290
Dogetha, steatite . . . . .	54 A/8	465
Garh, copper . . . . .	54 B/10	132
Gisgarh, steatite . . . . .	54 B/9	465
Kachor Rewasa, salt . . . . .	45 M/3	447
Karwar, iron . . . . .	54 F/2	278
Kawa, steatite . . . . .	54 B/9	465

	SHEET.	PAGE.
<b>RAJPUTANA—<i>contd.</i></b>		
<b>Jaipur—<i>contd.</i></b>		
Khetri, alum] . . . . .	45 M/13	8
„ cobalt] . . . . .	„	113
„ copper] . . . . .	„	132
„ nickel . . . . .	„	392
„ sulphate of copper . . . . .	„	466
Lalsot, copper . . . . .	54 B/6	132
Maundla, marble . . . . .	—	58
Morra, steatite . . . . .	54 B/13	465
Nabaro, copper . . . . .	54 A/8	132
Nimla, iron . . . . .	54 A/8	278
Raghnathgarh, sandstone . . . . .	45 M/6	59
Raialo, iron . . . . .	54 A/4	278
„ marble . . . . .	„	58
Raipur, iron . . . . .	45 M/14	278
Rajmahal, beryl . . . . .	45 O/5	157
„ garnet . . . . .	„	172
Ramgarh, turquoise . . . . .	45 M/4	185
Rasnu, kaolin . . . . .	54 B/10	290
Salimpur, flagstone . . . . .	54 A/16	58
Sambhar, borax . . . . .	45 N/1	24
„ salt . . . . .	„	446, 447
„ sulphate of soda . . . . .	„	469
Singhana, alum . . . . .	44 P/16	8
„ copper . . . . .	„	32
„ sulphate of copper . . . . .	„	466
Udhala, copper . . . . .	54 A/8	132

	SHEET.	PAGE.
<b>RAJPUTANA—<i>contd.</i></b>		
<b>Jaisalmer—</b>		
Abur, marble . . . . .	40 I/12	59
Deori Chakardha, lithographic stone. . . . .	40 I/11	312
Jaisalmer, limestone . . . . .	40 J/13	59
Mandar, fullers' earth . . . . .	40 I/15	151
<b>Kishangarh</b>		
Barla, fluor-spar . . . . .	45 J/15	149
Dadia, mica . . . . .	45 J/15	372
Govindsagar, chrysoberyl . . . . .	—	157
Kanchria, iron . . . . .	45 J/14	278
„ ilmenite . . . . .	„	432
Kishangarh, ochre. . . . .	45 J/14	396
Mandaoria, molybdenum . . . . .	45 J/14	389
Neagaon, mica . . . . .	45 N/4	372
Sagar, beryl . . . . .	45 N/4	157
Sarwar, garnet . . . . .	45 N/4	172
„ mica . . . . .	„	372
Sillora, quartzite . . . . .	45 J/14	57
<b>Marwar (Jodhpur)—</b>		
Degana, tungsten . . . . .	45 J/5	487
Didwana, salt . . . . .	45 I/11	448
Falodi, salt . . . . .	45 A/7	448
Haripur, manganese . . . . .	45 J/4	362
Jodhpur, sandstone . . . . .	45 F/3	60
Kapuri, fullers' earth . . . . .	—	152
Kurlo, gypsum . . . . .	40 O	230
Madpura, gypsum . . . . .	40 O	230



	SHEET.	PAGE.
<b>RAJPUTANA—<i>contd.</i></b>		
<b>Marwar (Jodhpur)—<i>contd.</i></b>		
Makrana, marble . . . . .	45 I/12	59
Nagaur, gypsum . . . . .	45 E/12	230
Pachpadra, salt . . . . .	45 C/1	448
Sarangwa, marble . . . . .	45 G/11	59
Shaokar, gypsum . . . . .	40 O	230
Sojat, zinc . . . . .	45 G/9	489
<b>Mewar (Udaipur)—</b>		
Gangar, iron. . . . .	45 K/12	278
„ mineral water . . . . .	„	387
„ manganese . . . . .	„	362
Jawar, silver-lead . . . . .	45 H/11	304
„ zinc . . . . .	„	489
Kankroli, marble . . . . .	45 G/16	60
Mandal, copper . . . . .	45 K/11	132
Mandalgarh, marble . . . . .	45 O/4	60
Rewara, copper . . . . .	45 K/8	133
Shahpura, garnet . . . . .	45 K/14	173
<b>Sirohi—</b>		
Rohira, copper . . . . .	45 D/14	133
„ gold . . . . .	„	217
„ mica . . . . .	„	372
<b>Tonk—</b>		
Agra, bauxite . . . . .	55 E/5	22
Chattarbhaj hills, mica . . . . .	45 N/16	372
Isarwas, bauxite . . . . .	54 H/8	22
Kotra, bauxite . . . . .	55 E/5	22

	SHEET.	PAGE.
<b>SIKKIM, zinc</b> . . . . .	..	490
Bam, copper . . . . .	78 A/8	133
Barmiak, copper . . . . .	78 A/8	133
Beopertam, mineral water . . . . .	78 A/6	387
Bhotang, copper . . . . .	78 A/12	133
Chumbong, copper . . . . .	78 A/4	133
Dajong, copper . . . . .	78 A/7	134
Dentam, copper . . . . .	78 A/3	134
Dikchu (Lindok), copper . . . . .	78 A/11	134
Great Rangit R., coal . . . . .	78 A/8	112
Jugdum, copper . . . . .	78 A/4	134
Lingui, copper . . . . .	78 A/12	134
Mik, copper . . . . .	78 A/8	134
Momai, mineral water . . . . .	78 A/9	387
Mongbru, copper . . . . .	78 A/7	134
Pachikhani, copper . . . . .	78 A/12	134
Pakyong, copper . . . . .	78 A/12	134
Phug Sachu, mineral water . . . . .	78 A/12	387
Puklaz Sachu, mineral water . . . . .	—	387
Ranglichu, copper . . . . .	78 A/12	134
Rathokhani, copper .. . . .	78 A/4	135
Rinchimpong, copper . . . . .	78 A/8	135
Sirbong, copper . . . . .	78 A/8	135
Temi, copper . . . . .	78 A/8	135
Tsuntang (Cheungtung), graphite . . . . .	78 A/10	224
Tukkani, copper . . . . .	78 A/8	135
Yeumtong, mineral water . . . . .	78 A/9	387

	SHEET.	PAGE.
<b>TIBET, jadeite</b> . . . . .	..	283
Batang, mercury . . . . .	91 N/8	364
Bongwa Tal, borax . . . . .	—	25
Chak Chaka lakes, borax . . . . .	61 H/14	25
Chaksam, gold . . . . .	77 K/11	218
„ monazite . . . . .	„	390
Daba, gold . . . . .	53 M/16	217
Kampa Dzong, mineral water. . . . .	77 D/11	387
Khangma, mineral water . . . . .	77 H/10	387
Manasarowar lake, gold . . . . .	62 F/6	217
Pallo Letok, gold . . . . .	61 J/7	218
Roksum, borax . . . . .	52 O/16	25
Thok Daurakpa, gold . . . . .	70 H/4	218
Thok Jalung, gold . . . . .	61 H/11	218
Tirtapani, mineral water . . . . .	62 A/16	387
Yoja, mineral water . . . . .	78 A/13	387
<b>TURKESTAN—</b>		
Shahidula, jade . . . . .	51 H/15	283
<b>UNITED PROVINCES, saltpetre</b> . . . . .	..	451
<b>Agra—</b>		
Fatehpur Sikri, sandstone . . . . .	54 E/12	60
Aligarh, borax . . . . .	54 I/1	26
Allahabad, soda . . . . .	..	456
Partabpur, sandstone . . . . .	63 G/11	60
Seorajpur, sandstone . . . . .	63 G/12	61
<b>Almora—</b>		
Almora, quartzite . . . . .	53 O/10	61

	SHEET.	PAGE.
<b>UNITED PROVINCES—<i>contd.</i></b>		
<b>Almora—<i>contd.</i></b>		
Bagesar, steatite . . . . .	53 O/13	465
Baidli Baghir, lead . . . . .	—	305
Bainskal, lead . . . . .	62 C/1	305
Banini Devi, graphite . . . . .	53 O/10	224
Chiteli, slate . . . . .	53 O/5	61
Dharma pass, arsenic . . . . .	62 B/11	15
Dol, graphite . . . . .	53 O/15	224
Dwara Hath, iron . . . . .	53 O/5	280
Gangoli, copper . . . . .	62 C/2	135
Gargoli, graphite . . . . .	53 O/10	224
Girithi R., lead . . . . .	62 B/2	305
Gumti (Gomati) R., gold . . . . .	53 O/9	218
Gun, lithographic stone . . . . .	62 C/2	312
Kalimati, graphite . . . . .	53 O/10	224
Kosila R., alum . . . . .	53 O/10	8
Ladhar R., graphite . . . . .	53 O/13	225
Lohughat, slate . . . . .	62 C/3	61
Mansiari, arsenic . . . . .	62 B/8	15
„ sulphur . . . . .	„	476
Panar (Ponaar) R., gold . . . . .	53 O/15	218
„ „ „ iron . . . . .	„	280
Pithagora (Pithoragarh), asbestos . . . . .	62 C/2	18
Pulsimi, graphite . . . . .	53 O/10	224
Rai, copper . . . . .	62 C/2	136, 137
„ lead . . . . .	„	305
Ralam, lead . . . . .	62 B/7	305

	SHEET.	PAGE.
<b>UNITED PROVINCES—<i>contd.</i></b>		
<b>Almora—<i>contd.</i></b>		
Ranikhet, gneiss . . . . .	53 O/6	61
Shankalpa glacier, arsenic . . . . .	62 B/7	15
Simalkhet, iron . . . . .	53 O/5	280
Sira, copper . . . . .	62 C/1	135, 136
Sual R., graphite . . . . .	53 O/10	224
Thakil hill, steatite . . . . .	62 C/2	465
Tuchida, lead . . . . .	—	305
<b>Banda—</b>		
Banda, mineral water . . . . .	63 C/7	388
<b>Benares, soda . . . . .</b>	..	456
Benares, mineral water . . . . .	63 O/3	388
<b>Dehra Dun—</b>		
Jeripani, gypsum . . . . .	53 J/3	231
Kalawala pass, lignite . . . . .	53 F/15	309
Kalsi, copper . . . . .	53 F/14	137
Landour, mineral water . . . . .	53 J/3	388
Mussooric, phosphate of lime . . . . .	53 J/3	426
Rajpur, lignite . . . . .	53 J/3	310
Sahasradhara, gypsum . . . . .	53 J/3	231
„ mineral water . . . . .	„	388
Salkot, gypsum . . . . .	53 J/3	231
Timli pass, lignite . . . . .	53 F/11	309
(Jaunsar), slate . . . . .	..	61
„ zinc . . . . .	..	490
Buraila, lead . . . . .	53 F/14	305
Kharsi, lead . . . . .	53 F/13	306

	SHEET.	PAGE
<b>UNITED PROVINCES—<i>contd.</i></b>		
<b>Dehra Dun—<i>contd.</i></b>		
<b>(Jaunsar)—<i>contd.</i></b>		
Konain, lead . . . . .	53 F/13	306
Kuma, lead . . . . .	53 J/2	306
Maiyur (Maiwar), lead . . . . .	53 F/9	305
„ „ sulphur . . . . .	„	475
Mudhaul, lead . . . . .	53 F/13	306
<b>Farrukhabad—</b>		
Fatehgarh, pottery clay. . . . .	54 M/11	290
<b>Garhwal, potstone . . . . .</b>	..	465
Al Agar, copper . . . . .	53 N/8	136
Alaknanda R., copper . . . . .	53 N/3	136
„ gold . . . . .	„	218
Badhangarh, asbestos . . . . .	53 N/12	17
Chitawa Pipal, gold . . . . .	53 N/3	218
Dasoli, sulphur . . . . .	53 N/7	476
Dhanpur, copper . . . . .	53 N/4	135, 136
„ lead . . . . .	„	305
Ganges R., gold . . . . .	53 J/8	218
Gargia R., sulphate of iron . . . . .	—	467
„ sulphur . . . . .	—	476
Gaurikhund, mineral water . . . . .	53 N/2	388
Gwaldrum, gold . . . . .	53 N/12	218
Jhak, silver-lead . . . . .	53 N/8	305
Joshinath, asbestos . . . . .	53 N/10	18
Koh R., gold . . . . .	53 K/10	219
Kotdwara, lignite . . . . .	53 K/10	310
Lachman Jhula, gold . . . . .	53 J/8	218

	SHEET.	PAGE.
<b>UNITED PROVINCES—<i>contd.</i></b>		
<b>Garhwal—<i>contd.</i></b>		
Marbugetti, copper . . . . .	—	136
Nagpur, copper . . . . .	53 N/3	135
„ iron . . . . .	„	280
„ sulphur . . . . .	„	476
Nandpryag, sulphur . . . . .	53 N/7	476
Niti (Juwar) pass, arsenic . . . . .	53 N/13	15
„ „ „ sulphur . . . . .	„	476
Patal, lead . . . . .	—	305
Pindar R., gold . . . . .	53 N/8	219
Pipuli, copper . . . . .	—	136
Pokri, copper . . . . .	53 N/3	136
Pringlapani, copper . . . . .	—	136
Ramganga R., gold . . . . .	53 K/14	219
„ „ sulphate of iron . . . . .	„	467
„ „ sulphur . . . . .	„	476
• Sona R., gold . . . . .	53 K/10	219
Tapoban, mineral water. . . . .	53 N/11	388
Ukhimath, asbestos . . . . .	53 N/2	18
Ghazipur, salt . . . . .	..	448
Hamirpur, steatite . . . . .	..	465
Puraini, gypsum . . . . .	54 O/13	231
<b>Jalaun—</b>		
Karim Khan, kankar . . . . .	54 N/7	61
Marhapur, salt . . . . .	54 N/7	449
Jhansi, steatite . . . . .	..	465
Gokhal, gypsum . . . . .	54 O/5	231

	SHEET.	PAGE.
<b>UNITED PROVINCES—<i>contd.</i></b>		
<b>Jhansi—<i>contd.</i></b>		
Gonti, gypsum . . . . .	54 O/1	231
Saurai, copper . . . . .	54 L/15	137
Mirzapur, ilmenite . . . . .	..	432
„ manganese . . . . .	..	362
„ soda . . . . .	..	456
Bichi R., marble . . . . .	63 L/16	62
Chunar, sandstone . . . . .	63 K/16	62
Korchi, iron . . . . .	63 P/8	281
Mirzapur, sandstone . . . . .	63 K/12	62
Umlah Ghat, sulphate of iron . . . . .	63 P/6	467
<b>Naini Tal—</b>		
Balia R., lignite . . . . .	53 O/11	309
Bijapur, iron . . . . .	53 O/12	280
Dechauri, iron . . . . .	53 O/7	280
Dhaniakot, iron . . . . .	53 O/7	280
Dhapila, gypsum . . . . .	53 O/7	231
Dhela R., lignite . . . . .	53 O/3	309
Jakh, alum . . . . .	53 O/7	8
Jham, iron . . . . .	53 O/12	280
Khurpa Tal, iron . . . . .	53 O/7	281
Loha Bhabar, iron . . . . .	53 O/3	280
Nihal R., gypsum . . . . .	53 O/7	231
Ramgarh, iron . . . . .	53 O/11	280
Partabgarh, soda . . . . .	..	456
Kindauli, peat . . . . .	63 G/9	397



# INDEX OF LOCALITIES.

143

	SHEET.	PAGE.
<b>UNITED PROVINCES—concl'd.</b>		
<b>Tehri Garhwal—</b>		
Aglar R., slate . . . . .	53 J/3	62
Jamnotri, mineral water . . . . .	53 I/8	388
Palia (Wazirgarh), mineral water . . . . .	53 J/5	388

**CALCUTTA**  
**SUPERINTENDENT GOVERNMENT PRINTING, INDIA**  
**8, HASTINGS STREET**

**BIBLIOGRAPHY**  
**OF**  
**INDIAN GEOLOGY, PART III**

**INDEX OF SUBJECTS**

**Compiled by T. H. D. LaTouche, M.A., F.G.S.**  
**Fellow of the Asiatic Society of Bengal.**

Published by the Government of India.

**CALCUTTA :**  
**SOLD AT THE OFFICE OF THE GEOLOGICAL SURVEY OF INDIA,**  
**27, CHOWRINGHEE ROAD,**

**1923**



## INTRODUCTORY NOTE.

---

THE figures in this Index enclosed in brackets refer to the "Bibliography of Indian Geology and Physical Geography" published in Calcutta in 1917. The first, in heavy type, is the serial number of the Author concerned; then follows the number of his contribution, if more than one; and lastly the page number, if necessary. The references to each subject are arranged in chronological order, beginning with the earliest; but when an author has made more than one contribution on a particular subject, they are included in a single bracket, though some may be of later date than those which follow.

The Economic Minerals of India, which have been dealt with in Part II, are not included in this Index; but brief reference is made to the minerals described in works on the neighbouring countries, Ceylon, the Malay Peninsula, etc., which are mentioned in the Bibliography.

The names of fossil genera and species are inserted only when they appear in the titles of papers. A complete index of the fossils described in the Geological Literature relating to India has been compiled, and, it is hoped, will shortly be ready for publication.

Natural phenomena, such as Glaciers, Lakes, Hot Springs, etc (with the exception of Mountains and Rivers, which are entered under their proper names), will be found under those headings, and not under the name of the locality or region in which they occur.

Vernacular and obsolete terms are indicated by inverted commas.

In order to make the Index as complete as possible, references are given to a number of papers that have appeared between the years 1916, the date of compilation of the Bibliography, and 1920; also to a few papers that were inadvertently omitted from that work. A list of these publications is given below, and references to them are distinguished by an asterisk (\*).

T. H. D. LATOUCHE.

## SUPPLEMENTARY LIST.

---

### A

**Adamson, Sir Harvey.**

- 9a . 1918. The Material Resources of Burma. *Bull. Imp. Inst.*, XVI, 68—79.

**Annandale, N.**

- 32—2. 1918. Fauna of the Inle Lake,—Introductory Account of the Lake. *Rec. Ind. Museum*, XIV, 1—7.
- 3. 1919. The Gastropod Fauna of Old Lake Beds in Upper Burma. *Rec. G. S. I.*, L, 209—240.
- 4. 1919. Report on the Aquatic Faunas of Seistan, — Geographical Introduction. *Rec. Ind. Museum*, XVIII, 3—16.
- 5. 1920. Observations on “*Physa Prinsepia*,” Sowerby, and on a Clionid Sponge that burrowed in its shell. *Rec. G. S. I.*, LI, 50—64.

**Anon.**

- 35—89. 1916. Recent work on Monazite and the Thorium Minerals in Ceylon. *Bull. Imp. Inst.*, XIV, 321—369.
- 90. 1918. Tin in Burma. *Min. Journ.*, CXXIII, 683—684.

**Arjan Singh, see Barnes, J. H.**

### B

**Balaji Rao, B.**

- 68—7. 1915. Report on Washings for Gold in the bed of the Tungabhadra River near Nagasamudra, Shimoga District. *Rec. Mysore Geol. Dep.*, XIV, 163—169.
- 8. 1915. Report on prospecting for Gold near Tadasa and Agardhalli in the Shimoga District. *Rec. Mysore Geol. Dep.*, XIV, 171—174.

**Bancroft, Miss N.**

- 73a . 1913. On some Indian Jurassic Gymnosperms. *Trans. Linn. Soc.*, Ser. 2, *Botany*, VIII, 69—86.

**Barkat Ali, see Barnes, J. H.****Barnes, J. H., and Arjan Singh.**

- 77a . 1917. Chalybeate Waters from Tube Wells in the Punjab. *Journ. A. S. B., N. S.*, XIII, *Proc.*, clxxvii (Abst.).

**Barnes, J. H., and Barkat Ali.**

- 77b . 1917. Alkali Soils: some Biochemical Factors in their Reclamation. *Agric. Journ. India*, XII, 368—389.

**Bather, F. A.**

- 85a . 1918. Notes on Yunnan Cystidea. *Geol. Mag.*, Dec. 6, V, 507—515, 532—540; VI, 71—77, 110—115, 143, 255—262, 318—325.

**Beer, E. J.**

- 96a—1. 1919. Note on a Spiral Impression on Lower Vindhyan Limestone. *Rec. G. S. I.*, L, 139.

- 2. 1919. Notes on Rocks from Pavagarh to Dohad. *Trans. Min. Geol. Inst. India*, XIII, 73—127.

**Belaiew, N.**

- 98a . 1918. Damascene Steel. *Journ. I. S. Inst.*, XCVII, 417—439.

**Bonnet, P.**

- 168a . 1919. Sur les relations entre les couches à *Otoceras* de l'Arménie (Transcaucasie méridionale) et celles de l'Himalaya. *C. R. Ac. Sci.*, CLXIX, 288—291.

**Broom, R.**

- 203a . 1915. On the Triassic Stegocephalians, *Brachyops*, *Bothriceps* and *Lydekkeriana*, gen. nov. *Proc. Zool. Soc.*, 1915, 363—368.

**Brown, J.**

- 210—2. 1920. Quarrying a thick Coal Seam in India, with Notes on Haulage and Drainage. *Trans. Min. Geol. Inst. India*, XIV, 97—107.

**Brown, J. Coggin.**

211—17. 1916. A descriptive Catalogue of the Meteorites comprised in the Collection of the Geological Survey of India, Calcutta (on August 1, 1914). *Mem. G. S. I.*, XLIII, 149—287.

—18. 1916. A Note on the Iron Ore Deposits of Twinngé, Northern Shan States. *Rec. G. S. I.*, XLVII, 137—141.

—19. 1916. Contributions to the Geology of the Province of Yünnan in Western China. V. — Geology of parts of the Salween and Mekong Valleys. *Rec. G. S. I.*, XLVII, 205—266.

—20. 1917. Geology and Ore Deposits of the Bawdwin Mines. *Rec. G. S. I.*, XLVIII, 121—178.

—21. 1917. A preliminary Note on the Origin of Wolfram-bearing Quartz Lodes in Tavoy District, Lower Burma. *Journ. A. S. B.*, N. S., XIII, *Proc.*, ccii-cciii (Abst.).

—22. 1918. The Cassiterite Deposits of Tavoy. *Rec. G. S. I.*, XLIX, 23—33.

—23. 1919. The Genesis of Tungsten Ores. *Geol. Mag.*, Dec. 6. VI, 44—46.

—24. 1920. Notes on Tungsten Ore Deposits in Burma. *Journ. Soc. Chem. Ind.*, XXXIX, *Trans.*, 44—48.

—25. 1920. The Mines and Mineral Resources of Yünnan, with short Accounts of its Agricultural Products and Trade. *Mem. G. S. I.*, XLVII, 1—201.

**Brown, J. Coggin, and Heron, A. M.**

211<sup>a</sup> . 1919. The distribution of Ores of Tungsten and Tin in Burma. *Rec. G. S. I.*, L, 101—121.

**Buchanan, Sir G. C.**

221<sup>a</sup> . 1916. The Rangoon River-Training Works. *Proc. Inst. C. Eng.*, CCII, 143—242.



**Buckman, S. S.**

- 227—2. 1918. The Brachiopoda of the Namyau Beds, Northern Shan States, Burma. *Pal. Indica*, N. S., III, No. 2, 1—254.

**Burlton, C. H. B.**

- 234—2. 1916. The Magnesite Mines of India. *As. Quart. Rev.*, N. S., IX, 420—432.

**Burn, F. N.**

- 234a . 1917. Earthquake in Burma. [July 5, 1917.] *Nature C.*, 265—266.

**Burrard, Sir S. G.**

- 239—10. 1916. The plains of Northern India and their relationship to the Himalaya Mountains. *Journ. A. S. B.*, N. S., XII, *Proc.*, lxxx-xcviii.

- 11. 1918. Geological interpretations of geodetic results: a critical examination of Mr. R. D. Oldham's recent treatise on Himalayan structure. *Geogr. Journ.*, LII, 237—248.

**Burton, R. C.**

- 243—3. 1917. On the origin of the Laterite of Seoni, Central Provinces. *Rec. G. S. I.*, XLVIII, 204—218.

**C****Campbell, J. Morrow.**

- 275—2. 1917. Laterite: its Origin, Structure, and Minerals. *Mining Mag.*, XVII, 67—77, 120—128, 171—179, 220—229.

- 3. 1919. Ore Minerals of Tavoy. *Mining Mag.*, XX, 76—89.

- 4. 1919. Water in Rock Magmas and Veins. *Mining Mag.*, XXI, 343—349.

**Chacko, I. C.**

- 297—3. 1916. Optically positive Cordierite [from Travancore]. *Geol. Mag.*, Dec. 6, III, 462—464.

**Chacko, I. C.—*contd.***

- 297—4. 1917. Report on the Monazite Sand Deposits in Travancore. Fol., 13 pp., Trivandrum.
- 5. 1918. The Materials available in Travancore for the manufacture of Lime-sand Bricks, Slabs, and Tiles. Fol., Trivandrum.
- 6. 1919. Report on Quartz, Graphite, and Mica, occurring in the Mundakayam District. *Ann. Report, State Geologist, Travancore*, 1093 M. E., 1—6.
- 7. 1919. A Note on the Limestone Formations of Travancore. *Ann. Report, State Geologist, Travancore*, 1093 M. E., 7—10.
- 8. 1919. The Laterites of Travancore. *Ann. Report, State Geologist, Travancore*, 1093 M. E., 14—23.
- 9. 1919. A short Sketch of the Geology of Travancore and its Mineral Resources. *Journ. A. S. B., N. S.*, XV, *Proc.*, cxcvii—cxviii (Abst.).

———, *see* Krishna Iyer, K. R.

**Chinmayanandan, T. K.**

- 310a . 1919. On Haidinger's Rings in Mica [from Burma]. *Proc. Roy. Soc.*, XCV—A, 176—189.

**Coales, O.**

- 329a . 1919. Eastern Tibet. *Geogr. Journ.*, LIII, 228—253.

**Cockerell, T. D. A.**

- 331a—1. 1916. Insects in Burmese Amber. *Amer. Journ. Sci.*, Ser. 4, XLII, 135—138.
- 2. 1917. Arthropods in Burmese Amber. *Amer. Journ. Sci.*, Ser. 4, XLIV, 360—368.
- 3. 1917. Arthropods in Burmese Amber. *Psyche*, XXIV, 40—45.
- 4. 1917. Fossil Insects. *Ann. Entom. Soc. Amer.*, X, 1—22.

**Cockerell, T. D. A.—contd.**

331<sup>a</sup>—5. 1917. Insects in Burmese Amber. *Ann. Entom. Soc. Amer.* X, 323—329.

—6. 1919. Two interesting Insects in Burmese Amber. *Entomologist*, LII, 193—195.

—7. 1919. Insects in Burmese Amber. *Entomologist*, LII, 241—243.

—8. 1920. Fossil Arthropods in the British Museum. *Ann. Mag. Nat. Hist.*, Ser. 9, V, 273—279, 455—463; VI, 65—72, 211—214.

—9. 1920. A Therevid Fly in Burmese Amber. *Entomologist*, LIII, 169—170.

**Cornish, Vaughan.**

363<sup>a</sup>. 1897. On the Formation of Sand-dunes. *Geogr. Journ.*, IX, 278—309.

**Cotter, G. de P.**

372—12. 1917. A revised Classification of the Gondwana System. *Rec. G. S. I.*, XLVIII, 23—33.

—13. 1918. The Geotectonics of the Tertiary Irrawaddy Basin. *Journ. A. S. B.*, N. S., XIV, 409—420.

—14. 1919. Report on the Sanni Sulphur Mines. *Rec. G. S. I.*, L, 130—138.

———, see Pilgrim, Guy E.

**Crookes, Sir W.**

391<sup>a</sup>. 1917. On the Photographic Spectra of Meteorites. *Phil. Trans.*, CCXVII—A, 411—430; *Chem. News.*, CXIX, 45—47, 53—55, 61—62.

**D****Das Gupta, Hem Chandra.**

423—7. 1913. On Two-shouldered Stone Implements from Assam. *Journ. A. S. B.*, N. S., IX, 291—293.

**Das Gupta, Hem Chandra—*contd.***

423—8. 1915. Palæontological Notes from Hazara. *Journ. A. S. B.*, N. S., XI, 253—257.

—9. 1917. On the occurrence of Limburgite in British Baluchistan. *Journ. A. S. B.*, N. S., XIII, 293—298.

—10. 1917. On the Zonal Distribution of *Placenticerus tamulicum* Kossmat. *Proc. Indian Assoc. Sci.*, II, 36—40.

—11. 1917. Notes on some Fish Teeth from the Tertiary beds of Western India. *Proc. Indian Assoc. Sci.*, III, 158—160.

—12. 1918. On a peculiar polished Hammerstone, from Singhbhum, Chota Nagpur, India. *Ind. Antiquary*, XLVII, 135—136.

—13. 1919. Notes on the Panchet Reptile. *Journ. A. S. B.*, N. S., XV, *Proc.*, cxcix (Abst.).

—14. 1919. Note on a Mammalian Fossil from Bhavnagar (Kathiawar). *Journ. A. S. B.*, XV, *Proc.*, cxcix (Abst.).

———, *see* Vredenburg, E. W.

**Datta, S. C.**

424a . 1917. On the alteration of Pyrite occurring in Steatite. *Proc. Indian Assoc. Sci.*, II, 18—25.

**Davis, A. Morley.**

431a . 1918. The Problem of the Himalaya and the Gangotric Trough. *Geogr. Journ.*, LI, 175—183.

**Deprat, J.**

468—7. 1916. Sur la découverte d'horizons fossilifères nombreux et sur la succession des faunes dans le Cambrien moyen et le Cambrien supérieur du Yunnan meridional. *C. R. Ac. Sci.*, CLXIII, 761—763.

—8. 1917. Sur la présence du Cambrien inférieur à l'ouest de Yunnan Fou. *C. R. Ac. Sci.*, CLXV, 564.

**Dickinson, A.**

- 484a . 1918. Water Power in India. *Journ. Soc. Arts*, LXVI, 417—426.

**Douvillé, H.**

- 499—3. 1916. La Crétacé et l'Éocène du Tibet central. *Pal. Indica*, N. S., V, Pt. 3, 1—52.
- 4. 1920. La limite entre la Crétacé et l'Éocène, en Aquitaine, aux Indes, et au Soudan. *C. R. Ac. Sci.*, CLXX, 154—159.

**F****Fermor, L. L.**

- 577—52. 1917. On the Crystallography and Nomenclature of Hollandite. *Rec. G. S. I.*, XLVIII, 103—120.
- 53. 1918. Preliminary Note on the Burning of Coal Seams at the Outcrop. *Trans. Min. Geol. Inst. Ind.*, XII, 50—63.
- 54. 1919. The Mineral Resources of the Central Provinces. *Rec. G. S. I.*, L, 268—302.
- 55. 1919. Some Problems of Ore Genesis in the Archæans of India. *Journ. A. S. B.*, N. S., XV, *Proc.*, clxx-cxcv.
- 56. 1919. Note on "Lavas" formed by the burning of Coal seams. *Journ. A. S. B.*, N. S., XV, *Proc.*, cxcviii.

**Fermor, L. L., and Fox, C. S.**

- 577a . 1916. The Deccan Trap Flows of Linga, Chhindwara District, Central Provinces. *Rec. G. S. I.*, XLVII, 81—136.

**Fourtau, R.**

- 611a . 1918. Les Echinides des "Bagh Beds." *Rec. G. S. I.*, XLIX, 34—53.

**Fox, C. S. see Fermor, L. L.****G****George, Glen.**

- 646—4. 1917. The development of Deep Coal Areas in Bengal. *Trans. Min. Geol. Inst. India*, XI, 77—137.

**Ghose, A.**

- 652—4. 1919. Sedimentary Origin of the Dharwars. *Trans. Min. Geol. Inst. India*, XIV, 55—59.

**Glungler, G.**

- 666a . 1916. Die Gebirgsgruppe Bogdo-Ola im östlichen Tianschan,—Petrographischer Teil. *Abhandl. k-bayer. Akad. Wiss.*, XXVII, 5 Abh., 267—292.

**Gortani, M.**

- 682a . 1920. Permocarbonifero e permiano nella catena del Caracorum. *Atti R. Acc. Lincei, Rendic.*, Ser 5, XXIX, Pt. 2, 53—55.

**Gregory, J. W.**

- 704—6. 1919. A low-level Glaciated Surface in the Eastern Himalaya. *Geol. Mag.*, Dec. 6, VI, 397—406.

**Griffiths, H. D.**

- 709a—1. 1914. The Wolframite Industry of Lower Burma. *Mining Mag.*, X, 440—451.
- 2. 1917. The Wolfram Deposits of Burma. *Mining Mag.*, XVII, 60—66.
- 3. 1917. The Kanbaur Wolfram Mine. *Mining Mag.*, XVII, 211—219.

**Gröber, P.**

- 715—2. 1916. Die Gebirgsgruppe Bogdo-Ola im östlichen Tianschan.—Geologischer Teil. *Abhandl. k-bayer. Akad. Wiss.*, XXVII, 5 Abh., 247—266.

**Hallowes, K. A. K.**

- 741a—1. 1917. An account of the sub-division of the Deccan Trap Series in the neighbourhood of Narayanganj, Mandla District, Central Provinces. *Journ. A. S. B.*, N. S. XIII, *Proc.*, cccii (Abst.).
- 2. 1919. On some Infra-Trappeans and a Silicified Lava from Hyderabad, South India. *Rec. G. S. I.*, XLIX, 220—222.

**Hallowes, K. A. K.—*contd.***

741a—3. 1919. On the discovery of basic and ultra-basic members of the Charnockite Series in the Central Provinces. *Journ. A. S. B., N. S., XV, Proc.,* cxvii (Abst.).

—4. 1920. On the Coal Seams of the Foot-hills of the Arakan Yoma, between Letpan Yaw in Pakokku and Ngape in Minbu, Upper Burma. *Rec. G. S. I., LI, 34—49.*

**H****Hayden, Sir H. H.**

793—35. 1916. General Report of the Geological Survey of India for the year 1915. *Rec. G. S. I., XLVII, 1—41.*

—36. 1916. The Mineral Production of India during 1915. *Rec. G. S. I., XLVII, 144—195.*

—37. 1917. General Report of the Geological Survey of India for the year 1916. *Rec. G. S. I., XLVIII, 1—22.*

—38. 1917. The Mineral Production of India during 1916. *Rec. G. S. I., XLVIII, 35—97.*

—39. 1918. General Report of the Geological Survey of India for the year 1917. *Rec. G. S. I., XLIX, 1—22.*

—40. 1918. The Mineral Production of India during 1917. *Rec. G. S. I., XLIX, 55—116.*

—41. 1918. The relationship between Geology and Earthquakes in India. *Journ. A. S. B., N. S., XIV, Proc.,* xviii—xxiv.

—42. 1919. General Report of the Geological Survey of India for the year 1918. *Rec. G. S. I., L, 1—27.*

—43. 1919. The Mineral Production of India during 1918. *Rec. G. S. I., L, 141—208.*

—44. 1919. Geological Time, especially in its bearings on the Antiquity of the Human Race. *Journ. A. S. B., N. S., XV, Proc.,* xiv—xxi.

Hayden, Sir H. H.—*contd.*

793—45. 1920. General Report of the Geological Survey of India for the year 1919. *Rec. G. S. I.*, LI, 1—27.

—46. 1921. The Mineral production of India during 1919. *Rec. G. S. I.*, LI, 159—223.

Hayden, Sir H. H., and Pascoe, E. H.

794*a* 1919. Note on the geological aspect of the changes that have taken place in the rivers of Bengal. *Report on the Hooghly River and its Head-Waters*. Part I, 17—22.

Heron, A. M.

830—4. 1917. Monazite in Mergui and Tavoy. *Rec. G. S. I.*, XLVIII, 179—180.

—5. 1917. The Biana-Lalsot hills in Eastern Rajputana. *Rec. G. S. I.*, XLVIII, 181—203.

—6. 1917. The Geology of North-Eastern Rajputana and adjacent Districts. *Mem. G. S. I.*, XLV, 1—128.

———, *see* Brown, J. Coggin.

Hoffmann, J. D.

854*a* . 1916. The Bawdwin Mines. *Mining Mag.*, XIV, 139—146.

Holden, Miss R.

855*a*—1. 1915. On the Cuticles of some Indian Conifers. *Botanical Gazette*, LX, 215—227.

—2. 1916. A Fossil Wood from Burma. *Rec. G. S. I.*, XLVII, 267—272.

—3. 1917. On the Anatomy of two Palaeozoic Stems from India. *Annals of Botany*, XXXI, 315—326.

Hutoon, C. H.

899*a* . 1918. Rainfall, Irrigation, and the Subsoil Water-Level of the Gangetic Plain in the United Provinces of Agra and Oudh. *Agric. Journ. India*, XIII, 197—205, 460—470.



## J

**Jack, H. S. Maclean.**

- 917a . 1917. The Development of the Petroleum Industry in Assam. *Journ. Soc. Arts*, LXV, 589—596.

**Jayaram, B.**

- 937—8. 1915. Notes on a revision of the Survey in parts of Kadur, Shimoga, and Channagiri Taluks. *Rec. Mysore Geol. Dep.*, XIV, 61—107.

- 9. 1918. Annual Report of the Department of Mines and Geology, Mysore State, for the year 1916-17. *Rec. Mysore Geol. Dep.*, XVI, 1—50.

- 10. 1919. Annual Report of the Department of Mines and Geology, Mysore State, for the year 1917-18. *Rec. Mysore Geol. Dep.*, XVII, 1—25.

- 11. 1919. Notes on the revision of the Survey in parts of the Shimoga, Honnali, Shikarpur, Sagar, Nagar and Tirthahalli Taluks. *Rec. Mysore Geol. Dep.*, XVI, 67—109.

**Jones, H. Cecil.**

- 953—2. 1920. Note on Monazite in the Southern Shan States. *Rec. G. S. I.*, LI, 156.

- 3. 1920. Note on an occurrence of Graptolites in the Southern Shan States. *Rec. G. S. I.*, LI, 156.

**Jones, W. R.**

- 957—4. 1915. The Origin of the Secondary Stanniferous Deposits of the Kinta District, Perak, Federated Malay States. *Quart. Journ. Geol. Soc.*, LXXII, 165—197 (Abst., *Geol. Mag.*, Dec. 6, II, 381—382).

- 5. 1916. The Origin of Topaz and Cassiterite at Gunong Bakau, Malaya. *Geol. Mag.*, Dec. 6, III, 255—260.

- 6. 1916. Preliminary Report on Tin mining on the Main Range at Ulu Bakau and neighbourhood. *Geol. Mag.*, Dec. 6, III, 453—456.

**Joti Parshad Lala, see Middlemiss, C. S.**

## K

Keilhack, K.

- 968a. 1915. Granatsand-Dünen auf Ceylon. *Zeits. deutsch. Geol. Ges.*, LXVII, 47—56.

Kellas, A. M.

- 971—2. 1917. A consideration of the possibility of ascending the loftier Himalayas. *Geogr. Journ.*, XLIX, 26—48.

Koken, E.

- 1006—1a. 1885. Über fossile Säugethiere aus China. *Geol. u. Pal. Abhandl.*, III, 31—114.

Krishna Iyer, K. R., and Chacko, I. C.

- 1013a. 1919. A peculiar limestone from South Travancore. *Journ. A. S. B., N. S.*, XV, *Proc.*, cxcviii (Abst.).

## L

La Touche, T. H. D.

- 1034—46. 1917. A Bibliography of Indian Geology and Physical Geography; with an Annotated Index of Minerals of Economic Value. 8°, 2 Parts, Calcutta.

- 47. 1919. The Submerged Forest at Bombay. *Rec. G. S. I.*, XLIX, 214—219.

Leriche, M., and Reis, M.

- 1061a. 1916. Über fossile Fische aus der Bogdo-Ola [E. Tian-Schan]. *Abhandl. k-bayer. Akad. Wiss.*, XXVII, 5 Abh., 306—308.

Leuchs, K.

- 1066—2. 1919. Marines Ober-Karbon im zentralen Tianschan. *Sitz. k-bayer. Akad. Wiss.*, 1919, 217—228.

Loveman, M. H.

- 1094a—1. 1917. The Geology of the Bawdwin Mines, Burma, Asia. *Trans. Amer. Inst. Min. Eng.*, LVI, 170—194.

2. 1919. A connecting link between the Geology of the Northern Shan States and Yünnan. *Journ. Geol.*, XXVII, 204—211.

## M

**McClelland, J.**

- 1117—37. 1859. Sketch of the Medical Topography, or Climate and Soils of Bengal and the N. W. Provinces. 8°, 148 pp. London.

**McWilliam, A.**

- 1150a. 1918. Technical aspects of the Establishment of the Heavy Steel Industry in India, with results of some researches connected therewith. *Journ. I. S. Inst.*, XCVII, 451—468.

**Mann, H. H., and Paranjpe, S. R.**

- 1165—2. 1916. The Hot Springs of the Ratnagiri District. *Journ. Bo. As. Soc.*, XXIV, 185—212.

**Mansuy, H.**

- 1167—4. 1919. Paludinidæ fossiles du Bassin Lacustre de Mung-Tsen, Yunnan. *Bull. Serv. Géol. de l'Indo-Chine*, V, Fasc. III, 1—7.

- 5. 1919. Catalogue Général par terrains et par localités, des fossiles recueillis en Indo-Chine et en Yunnan, par Géologues du Service Géologique et par les Officiers du Service Géographique de l'Indo-Chine au cours des années 1903—1918. *Bull. Serv. Géol. de l'Indo-Chine*, VI, Fasc. VI, 1—226.

**Matley, C. A.**

- 1190a—1. 1918. Note on some Dinosaurian remains recently discovered in the Lameta beds at Jubbulpore. *Journ. A. S. B.*, N. S., XIV, *Proc.*, clxxxvi (Abst.).

- 2. 1919. On the remains of Carnivorous Dinosaurs from the Lameta beds at Jubbulpore. *Journ. A. S. B.*, N. S., XV, *Proc.*, cxcviii (Abst.).

**Maung Po San, see Warth, F. J.****Maxwell—Lefroy, E.**

- 1192a . 1916. Wolframite Mining in the Tavoy District, Lower Burma. *Trans. Inst. Min. Met.* XXV, 83—119.

**Meade, C. F.**

- 1195a . 1920. The Schlagintweits and Ibi Gamin (Kamet). *Alp. Journ.*, XXXIII, 70—75.

**Merzbacher, G.**

- 1211—2. 1904. Forschungsreise in der Zentralen Tian-Schan. *Peterm. Mitth.*, Ergbd., XXII, No. 149, 1—100. *Transl.*, 8°, 285 pp., London, 1905.
- 3. 1916. Die Gebirgsgruppe Bogdo-Ola im östlichen Tian-Schan. *Abhandl. k-bayer. Akad. Wiss.*, XXVII, 5 Abh., 1—246.

**Middlemiss, C. S.**

- 1219—32. 1917. Complexities of Archæan Geology in India. *Journ. A. S. B.*, N. S., XIII, *Proc.*, cxcv—ccii.
- 33. 1919. Possible occurrence of Petroleum in Jammu Province: Preliminary Note on the Nár-Budhán Dome, of Kotli Tehsil in the Punch Valley. *Rec. G. S. I.*, XLIX, 191—213.
- 34. 1919. On the inclination of the Thrust-Plane, or Reversed Fault, between the Siwalik and Murree Zone of formations, near Kotli, Jammu Province. *Rec. G. S. I.*, L, 122—125.

**Middlemiss, C. S., and Joti Parshad Lala.**

- 1219a . 1918. Note on the Aquamarine Mines of Daso on the Braldu River, Shigar Valley, Baltistan. *Rec. G. S. I.*, XLIX, 161—172.

**Middleton, W. B.**

- 1222a . 1915. Prospecting Tin Land in Malaya. *Trans. Inst. Min. Met.*, XXIV, 300—328.

**Minchinton, H. D.**

- 1231—3. 1917. Himalayan Scrambles in 1914. *Alp. Journ.*, XXXI, 51—70.

**Molony, E.**

- 1238—2. 1917. Rainfall, Irrigation, and Subsoil Water Reservoirs of the Gangetic Plain in the United Provinces of Agra and Oudh. *Agric. Journ. India*, XII, 84—89.

**Moore, E. S.**

- 1246a 1918. Air Blasts in the Kolar Gold Field, India. *Bull. Amer. Inst. Mining Engineers*, CXXXV, 687—694.

## N

**Neogi, Panchanan.**

- 1287—2. 1918. Copper in Ancient India. *Indian Assoc. Sci., Special Bulletin*, No. 1.

## O

**Oldham, R. D.—**

- 1324—74. 1916. The Support of the Himalaya. *Quart. Journ. Geol. Soc.*, LXXII, *Proc.*, viii—ix.

—75. 1917. The Structure of the Himalaya and of the Gangetic Plain, as elucidated by Geodetic Observations in India. *Mem. G. S. I.*, XLII, 149—301.

—76. 1918. The Support of the Mountains of Central Asia (being an Appendix to the Memoir on the Structure of the Himalaya and of the Gangetic Plain, as elucidated by Geodetic Observations in India). *Rec. G. S. I.*, XLIX, 117—135.

—77. 1918. The Geological Application of Geodetic Results. *Geogr. Journ.*, LII, 363—367.

—78. 1918. A Seasonal Variation in the Frequency of Earthquakes. *Quart. Journ. Geol. Soc.*, LXXIV, 99—105.

—79. 1919. The Interior of the Earth. *Geol. Mag.*, Dec. 6, VI, 18—27.

## P

**Paranjpe, S. R., see Mann, H. H.**

**Parona, C. F.**

- 1366a . 1917. Faune cretacicche del Caracorum degli Altipiani tibetani (Spedizione Italiana nell' Asia Centrale, 1913—1914). *Atti R. Acc. Lincei, Rendic.*, Ser. 5, XXVI, Pt. 2, 53—57..

**Pascoe, E. H.**

1369—14. 1919. The Early History of the Indus, Brahmaputra and Ganges. *Quart. Journ. Geol. Soc.*, LXXV, 138—157.

—15. 1920. Sulphur near the Confluence of the Greater Zab with the Tigris, Mesopotamia. *Rec. G. S. I.*, LI, 153—155.

———, see **Hayden, Sir H. H.**

**Pilgrim, Guy E.**

1408—13a. 1911. The fossil Giraffidæ of India. *Pal. Indica*, N. S., IV, Pt. 4, 1—29.

—23. 1917. Preliminary Note on some recent Mammal Collections from the Basal Beds of the Siwaliks. *Rec. G. S. I.*, XLVIII, 98—101.

—24. 1919. Suggestions concerning the History of the Drainage of Northern India arising out of a Study of the Siwalik Boulder Conglomerates. *Journ. A. S. B.*, N. S., XV, 81—99.

**Pilgrim, Guy E., and Cotter, G. de P.**

1406a . 1916. Some newly discovered Eocene Mammals from Burma. *Rec. G. S. I.*, XLVII, 42—77.

**Pinfold, E. S.**

1406d—1. 1918. Notes on Structure and Stratigraphy in the North-West Punjab. *Rec. G. S. I.*, XLIX, 137—160.

—2. 1918. Conditions governing the occurrence of Oil in the Punjab. *Journ. A. S. B.*, N. S., XIV, *Proc.*, clxxiii—clxxxiv.

—3. 1919. Two new Fossil Localities in the Garo Hills. *Rec. G. S. I.*, L, 126—129.

**Prior, G. T.**

1437—4. 1916. The Meteoric Stones of Launton..... Khairpur and Soko-Bunja. *Mineral. Mag.*, XVIII, 1—25.

**R****Rastall, R. H.**

1459a . 1918. The Genesis of Tungsten Ores. *Geol. Mag.*, Dec. 6, V, 193—203, 241—246, 293—296, 367—370.

**Reed, F. R. Cowper.**

1470—11. 1917. Ordovician and Silurian Fossils from Yunnan. *Pal. Indica*, N. S., VI, Pt. 3, 1—69.

— 12. 1919. The Yunnan Cystidea. *Geol. Mag.*, Dec. 6, VI, 92—93, 191—192.

**Reis, M., see Leriche, M.****S****Sahni, B., see Seward, A. C.****Sambasiva Iyer, V. S.**

1548—12. 1918. On the distinct Sedimentary Origin of some Quartzites of Mysore. *Journ. A. S. B.*, N. S., XIV, *Proc.*, clxxxvi (Abst.).

**Sampat Iyengar, P.**

1549—12. 1915. The Schistose Rocks of the Bababudans, with special reference to the Auriferous Series in their neighbourhood. *Rec. Mysore Geol. Dep.*, XIV, 109—134.

————, *see* Smeeth, W. F.

**Samuelson, B. M.**

1551a . 1917. The Effect of Flood Embankments on the River Levels in the Irrawaddy Delta. *Proc. Inst. C. Eng.*, CCIII, 362—370.

**Schenk, August.**

1567—2. 1882. Die von den Gebrüdern Schlagintweit in Indien gesammelten fossilen Hölzer. *Engler's Bot. Jahrb.*, III, 353—358.

**Schuster, J.**

1590a . 1916. Fossile Pflanzen aus dem Tian-Schan. *Abhandl. k-bayer. Akad. Wiss.*, XXVII, 5 Abh., 299—305.

**Scrivenor, J. B.**

1603—38. 1916. Two large Obsidianites from the Raffles Museum, Singapore. *Geol. Mag.*, Dec. 6, III, 145—146.

—39. 1918. The Kaolin Veins [Federated Malay States]. *Geol. Mag.*, Dec. 6, V, 79—82.

—40. 1918. The Origin of the Clays and Boulder-clays, Federated Malay States. *Geol. Mag.*, Dec. 6, V, 157—168.

**Sen, A. M.**

1606—5. 1915. Report on the Geology of the North-Western portion of the Shimoga District. *Rec. Mysore Geol. Dep.*, XIV, 135—161.

**Sen Gupta, Kiran K.**

1606a—1. 1916. On the hypersthenization of Monoclinic Pyroxenes [in Charnockite]. *Journ. A. S. B.*, N. S., XII, *Proc.*, cxxi—cxxiii (Abst.).

—2. 1916. On the Correlation of Augite-diorite and Dolerite [Cochin]. *Journ. A. S. B.*, N. S., XII, *Proc.*, cxxiii (Abst.).

—3. 1916. On the Chronological Sequence of some Megalithic Monuments. *Journ. A. S. B.*, N. S., XII, *Proc.*, cxxiv—cxxv (Abst.).

**Seward, A. C., and Sahni, B.**

1610a . 1920. Indian Gondwana Plants: A Revision. *Pal. Indica*, N. S., VII, Pt. 1, 1—41.

**Silver, A. H.**

1634a . 1917. The possibility of using *Reh* or *Sujji Mitti* for the manufacture of commercial Alkalis. *Agric. Journ India*, XII, 477—480.

**Simpson, F. L. G.**

1639—2. 1916. A description of the methods of working out the Pillars at the Mohpani Mines by means of packing, and a comparison of the dry and wet systems of packing. *Trans. Min. Geol. Inst. India*, XI, 29—48.



**Simpson, R. R.**

- 1640—11. 1917. Note on the correlation of the Kusunda-Jharia-Lodna Coal Outcrops. *Trans. Min. Geol. Inst. India*, XI, 269—270.

**Smeeth, W. F.**

- 1652—22. 1915. Annual Report of the Department of Mines and Geology, Mysore, for the year 1914. *Rec. Mysore Geol. Dep.*, XIV, 1—59.

—23. 1916. Outline of the Geological History of Mysore. *Bull. Mysore Geol. Dep.*, No. 6, 1—21.

—24. 1918. The Geology of Southern India, with particular reference to the Archæan Rocks of the Mysore State. *Quart. Journ. Geol. Soc.*, LXXIV, *Proc.*, lxxxiii-lxxxv.

—25. 1918. Air Blasts in the Kolar Goldfield, India. *Bull. Amer. Inst. Mining Engineers*, CXLII, 1542—1553.

**Smeeth, W. F., and Sampat Iyengar, P.**

- 1652a . 1916. The Mineral Resources of Mysore. *Bull. Mysore Geol. Dep.*, No. 7, 1—193.

**Smeeth, W. F., and Watson, H. E.**

- 1652b . 1918. The Radioactivity of Archæan Rocks from the Mysore State, South India. *Phil. Mag.*, Ser. 6, XXXV, 206—214.

**Stefanini, G.**

- 1690a—1. 1917. Echinini mesozoici del Caracorum raccolti dalla "Spedizione italiana nell' Asia Centrale (1913—1914). *Atti R. Acc. Lincei, Rendic.*, Ser 5, XXVI, Pt. 2, 49—50.

—2. 1917. Sull' esistenza di depositi cenomaniani ed altri livelli mesozoici nel Caracorum (Asia Centrale). *Atti R. Acc. Lincei, Rendic.*, Ser. 5, XXVI, Pt. 2, 190—195.

**Steichen, A.**

- 1690b . 1916. The variation of the Radioactivity of the Hot Spring at Tuwa [Bombay]. *Phil. Mag.*, Ser. 6, XXXI, 401—403

**Stoney, E. W.**

- 1714a—1. 1898. Extraordinary Floods in Southern India: their Causes and destructive Effects on Railway Works. *Proc. Inst. C. Eng.*, CXXXIV, 66—118.
- 2. 1917. Description of an Extraordinary Flood which occurred on the 11th November, 1903, in the Palar River; its Cause, and Destructive Effects. *Proc. Inst. C. Eng.*, CCIV, 410—416.

**Stuart, Murray.**

- 1723—10. 1918. Preliminary Note on the Srimangal Earthquake of July 8th, 1918. *Rec. G. S. I.*, XLIX, 173—189.
- 11. 1919. The Potash Salts of the Punjab Salt Range and Kohat. *Rec. G. S. I.*, L, 28—56.
- 12. 1919. Suggestions regarding the Origin of the Rock-Salt Deposits of the Punjab and Kohat. *Rec. G. S. I.*, L, 57—99.
- 13. 1919. The Galena Deposits of North-Eastern Putao. *Rec. G. S. I.*, L, 241—254.
- 14. 1919. Natural Gas in Bituminous Salt from Kohat. *Rec. G. S. I.*, L, 263—267.
- 15. 1920. The Srimangal Earthquake of 8th July, 1918. *Mem. G. S. I.*, XLVI, 1—70.
- 16. 1920. The growth of an efflorescence of Cerium sulphate on Travancore Graphite. *Rec. G. S. I.* LI, 156—158.

**Subha Rao, L.**

- 1723a . 1917. Corundum and its occurrence in Mysore. *Journ. A. S. B., N. S.*, XIII, *Proc.*, cciv (Abst.).

**T****Tipper, G. H.**

- 1787—13. 1919. On Pitchblende, Monazite, and other Minerals from Pichhli, Gaya District, Bihar and Orissa. *Rec. G. S. I.*, L, 255—262.

**Tipper, G. H.—*contd.***

**1787—14.** 1919. Note on Sipylite from the Nellore District, Madras Presidency. *Rec. G. S. I.*, L, 303.

—15. 1920. Note on Pseudo-crystals of Graphite from Travancore. *Rec. G. S. I.*, LI, 28—30.

—16. 1920. On a Mineral related to Xenotime from the Manbhum District, Bihar and Orissa Province. *Rec. G. S. I.* LI, 31—33.

**Tuckwell, H. M. Surtees.**

**1810a** . 1918. The Tata Iron and Steel Works: their Origin and Development. *Journ. Soc. Arts*, LXVI, 190—204.

**Turner, H. W.**

**1815a** . 1919. Review of the recent Literature on the Tungsten Deposits of Burma. *Econ. Geol.*, XIV, 625—639.

## V

**Van Bemmelen, J. M.**

**1829a** 1904. Beiträge zur Kenntnis der Verwitterungsprodukte der Silikate in Ton-, Vulkanischen und Laterite-Boden. *Zeits. f. anorg. Chem.*, XLII, 265—314.

**Varadaiya, M.**

**1832a** 1916. The Exploitation of Minerals in Mysore. *Bull. Mysore Geol. Dep.*, No. 8, 1—20, i—lvi.

**Venkataramaiya, B. N.**

**1838—5.** 1915. Notes on prospecting work [in the Mysore District]. *Rec. Mysore Geol. Dep.*, XIV, 175—188.

—6. 1919. Prospecting for Iron Ore in the Kemmangundia area. *Rec. Mysore Geol. Dep.*, XVI, 110—121.

**Vredenburg, E. W.**

**1854—44.** 1916. *Flemingostrea*, an eastern group of Upper Cretaceous and Eocene Ostreidæ: with descriptions of two new species. *Rec. G. S. I.*, XLVII, 196—203.

**Vredenburg, E. W.—contd.**

- 1854—45. 1917. Notes on the Origin of the Living Molluscan Fauna of the Indian Ocean, with reference to Former Geological Times. *Journ. A. S. B.*, N. S., XIII, *Proc.*, cciii (Abst.).
- 46. 1918. Considerations regarding a possible relationship between the Charnockites and Dharwars. *Journ. A. S. B.*, N. S., XIV, 433—448.
- 47. 1918. Note on the occurrence of *Dolium variegatum* Lamarck at Muskat, with considerations on its geographical distribution at the present day and in former geological times. *Journ. A. S. B.*, N. S., XIV, 449—452.
- 48. 1918. Suggestions regarding the mechanism of the "charriages." *Journ. A. S. B.*, N. S., XIV, *Proc.*, clxxxv—clxxxvi (Abst.).
- 49. 1919. The Pegmatites considered as an Index to the age of some of the unfossiliferous rocks in the Indian Peninsula. *Journ. A. S. B.*, N. S., XV, *Proc.* cxcv (Abst.).
- 50. 1919. The Succession of the tertiary marine faunas in the East Indies, based principally on a Study of the Siphonostomatous Gastropoda. *Journ. A. S. B.*, N. S., XV, *Proc.*, cc (Abst.).
- 51. 1919. Note on the marine fossils collected by Mr. Pinfold in the Garo Hills. *Journ. A. S. B.*, N. S., XV, *Proc.*, cci (Abst.).

**Vredenburg, E. W., and Dasgupta, H. C.**

- 1854a 1918. On the discovery of Upper Palæozoic Fossils in the Krol beds of the Simla region. *Journ. A. S. B.*, N. S., XIV, *Proc.*, clxxxv (Abst.).

**W****Wadia, D. N.**

- 1863a—1. 1918. *Stegodon Ganesa* in the Middle Siwaliks of Jammu. *Journ. A. S. B.*, N. S., XIV, *Proc.*, clxxxvii (Abst.).
- 2. 1919. *Geology of India, for Students.* 8°, 398 pp. London.

**Wadia, D. N.—*contd.***

- 1863a—3. 1919. Some saussurite boulders from Kashmir :—a Study in saussuritization. *Journ. A. S. B.*, N. S., XV, *Proc.*, cxcvi (Abst.).

**Walker, H. (2)**

- 1869—2. 1916. The Visuni and Ekh Khera aerolites. *Rec. G. S. I.*, XLVII, 273—279.
- 3. 1919. Some recent falls of aerolites in India. *Journ. A. S. B.*, N. S., XV, *Proc.*, cxcvii (Abst.).

**Ward, F. Kingdon.**

- 1883—2. 1913. Geological Notes on the "Land of Deep Corrosions." *Geol. Mag.*, Dec. 5, X, 148—153.
- 3. 1916. Glacial phenomena on the Yünnan-Tibet frontier. *Geogr. Journ.*, XLVIII, 55—68.
- 4. 1916. Further Geological Notes on the "Land of Deep Corrosions." *Geol. Mag.*, Dec. 6, III, 209—219.
- 5. 1919. On the possible prolongation of the Himalayan axis beyond the Dihang. *Geogr. Journ.*, LIV, 231—241.

**Waring, F. J.**

- 1888a . 1917. On the Physical Features of Adam's Bridge and the Currents across it, considered as affecting the proposed Construction of a Railway connecting India with Ceylon. *Proc. Inst. C. Eng.*, CCIII, 284—332.

**Warth, F. J., and Maung Po San.**

- 1891a . 1919. The Absorption of Lime by Soils [in Burma]. *Mem. Dep. Agric. Ind.*, V, 157—172.

**Warth, H.**

- 1892—30. 1916. Chemical composition of the Red Marl of the Salt Range, Punjab. *Rec. G. S. I.*, XLVII, 78.

**Washington, H. S.**

- 1893a . 1916. The Charnockite Series of Igneous Rocks [Analyses]. *Amer. Journ. Sci.*, Ser. 4, XLI, 323—338.

**Watson, H. E.,** *see* **Smeeth, W. F.**

**Wayland, E. J.**

1905—2. 1916. *Equus zeylanica*, *Spol. Zeyl.*, X, 261—278 ; XI, 81—83.

—3. 1919. Outlines of the Stone Ages of Ceylon. *Spol. Zeyl.*, XI, 85—125.

**Willbourn, E. S.**

1933a . 1917. The Pahang Volcanic Series. *Geol. Mag.*, Dec. 6, IV, 447—462, 503—514.

**Woodward, A. Smith.**

1963—2. 1915. On the Skull of an extinct Mammal related to *Æluropus* from a Cave in the Ruby Mines at Mogok, Burma. *Proc. Zool. Soc.*, 1915, 425—428.

**Workman, Mrs. F. Bullock, and W. Hunter Workman.**

1966—6. 1917. Two summers in the Ice-wilds of Eastern Karakoram, the exploration of nineteen hundred miles of mountain and glacier. 8°, London.

## Y

**Younghusband, Sir F. E.**

1986—9. 1917. Geographical Work in India. *Geogr. Journ.*, XLIX, 401—418.

## Z

**Zuber, R.**

1988a . 1915. Beiträge zur Geologie des Punjab (Ostindien). *Jahrb. k.—k. geol. Reichsanst.*, LXIV. 327—356.



# BIBLIOGRAPHY

## OF

### INDIAN GEOLOGY, PART III

#### INDEX OF SUBJECTS

---

### A

Abor Hills, Assam, geology (211—5).

—————, physical features (1218).

—————, rock specimens from (1117—6).

—————, topography (1926—2, 331, 396) (407—1; —5) (1844—2) (1101) (108—1).

Abu, Mt., petrology of granite from (1142—31).

Abur beds, Jaisalmer, (148—50, 16, 20) (1324—18, 159).

—————, discovery of ammonites in (905—3).

*Aceratherium gajense*, Pilg., correction of nomenclature (1406—19).

Adam's Bridge, description (1635) (316—1).

—————, origin and structure (1701—3, 140) (1881—1, 322; —3) (1088).

—————, physical features (1888a).\*

—————, silting of (188—2, 186).

Adam's Peak, Ceylon (438—1; —2; —3, 335) (855, 177) (319, 173) (1705—3).

—————, Valentyn's account of (1259).

Aden, fluor spar from (591—2).

———, geology (238—2) (1158—14) (122) (288—7, 84) (1159—4) (1835).

———, petrology of lavas from (1304) (1520) (1142—9) (1164, 174).

---

\* See Introductory Note—Supplementary List.



Aden, raised beach at (348—3).

———, rock specimens from (1294—25, 1132) (228—1).

———, topography (610).

———, water supply (1929) (1159—4).

Aden hinterland, geology (1077).

———, jurassic fossils from (1296) (1787—6).

———, petrology of rocks from (1854—38).

———, topography (1697) (1227).

Æolian origin, of miliolite limestone (555—7, 569).

———, of salt deposits, Rajputana (860) (859—76, 233 ; —80).

——— sands, consolidated, in Cutch (143—1).

———, in Kathiawar (302).

Aerolite, *see* Meteorite.

Affluents, of Karakoram glaciers, pressure effects of (1967—7)

Afghanistan, ancient mineral industry (622—1, 112).

———, bowenite from —, petrology (1142—29).

———, Devonian fauna (1470—6, 103).

———, fossil shells from (789).

———, Fusulinidæ of (793—16).

———, geographical notes on (134—4).

———, geological history (793—22, 73).

———, ——— sequence in (708—11).

———, geology, summary (708—16).

———, history of exploration in (1173—8).

———, jurassic beds in (708—13, 248) (793—22, 30).

———, monuments in (793—20).

———, musical sands in (235—16) (1091—2, 537).

Afghanistan, orographical map of (857—7).

—————, passes into (1173—12; —14).

—————, permian in (1311—40, 651).

—————, physiography (912) (709—3, 800) (134—1) (857—4; —5; —11, 56).

—————, rocks and minerals from (859—21).

—————, sand dunes in (673—4).

—————, topography (545) (749, Vol. II, 535) (1498) (1789) (1234—2) (103—1) (1894—1).

—————, travels in (236) (349—1, Vol. II) (1139—1) (235—17) (709—4, 343).

—————, triassic beds in (1311—48, 121).

————— (Eastern), geology (708—21).

————— (Northern), geology (708—13; —15) (793—22).

————— (—————), orography (881—5).

————— (—————), topography (1958—2, 157; —3, 99) (1465—3) (1103) (1155).

————— (North-Eastern), topography (857—9, 241).

————— (North-Western), geology (708—9, 61; —10).

————— (—————), topography (349—3) (857—9, 94).

————— (Southern), geology (900—8, 583) (708—4; —9).

————— (—————), physiography (91).

————— (—————), topography (1140—2) (1508).

————— (South-Eastern), Hippurite limestone from (148—ε5).

————— (Western), topography (1700).

————— *see also* North-West Frontier.

Aftershocks, of Assam earthquake (1324—60).

—————, diurnal variation in frequency (1324—64).

Agate beads, from North-Western India (1763—8).

Agate flake, from Godavari gravels (1975—2) (1326—47).

———— splinters, from Narbuda alluvium (3—3).

- Agate, vegetable impressions in —, from Son R. (1696—3).
- Agglomerate slates, Panjal system, origin and age (1219—23, 232).
- Agra, artesian boring at (1197—70, 120) (1854—2, 39).
- , copper spear heads from, composition (1436—14, 436).
- , proposed museum of economic geology at (1666—4).
- Air blasts, in Kolar mines (1652—9; —25\*) (1246a)\*.
- Ajabgarh series, Rajputana (730—2, 87; —4, 281) (830—6, 73)\*.
- , geological horizon (1034—39, 114).
- Ajmer, topography (910—1).
- Ajmer-Merwara district, topography (1033).
- Aka Hills, Assam, geology (1034—6).
- Akauktaung stage, Burma (1723—9, 242)=Marine beds of Irrawaddy series.
- Albaka beds, Pakhal series (987—23, 211).
- Albite, granular, associated with corundum (1633—1).
- Albite-hornblende rock, Jade Mines, Burma (88—1, 98).
- Alech hills, Kathiawar, igneous rocks of (11, 36).
- Algæ, fossil, in Indian jasper (1565).
- Alkali, manufacture of —, from 'reh' soils (1634a)\*.
- Alkali soils, *see* "Reh" lands *and* salts.
- Allagiri stage, Madura (596—24, 16).
- Allah Bund, Runn of Cutch, description (65—8).
- , cause of formation (235—11, 553, 567; —13, Vol. III, 314) (1975—11, 33) (1324—56).
- Allanite (?), from Nellore, composition (1787—11, 212).
- Alleppey, mud banks of (505, 218) (1161) (1173—2; —3) (1496) (987—29).
- , origin (1025—2')
- Alluvial fans, Baluchistan (1324—38, 41).

---

\* *See* Introductory Note—Supplementary List.

- Alluvial fans, Himalaya (1034—43, 196).  
 ———, Jhelum valley (669—1).  
 ———, Upper Indus Basin (502—1, 445) (1109—38, 49).  
 Alluvium, Assam valley (1117—7, 7) (1197—9, 437) (1134—2, 196).  
 ———, Baroda (596—40, 84).  
 ———, Bellary district (596—32, 180).  
 ———, Benares, section of (35—8).  
 ———, Broach district (148—53).  
 ———, Burma, composition (1369—11, 54).  
 ———, Calcutta, depth of (1117—21).  
 ———, section of (147—12).  
 ———, Cauvery delta (596—13, 156).  
 ———, Chandernagore, section of (1067—1, 157).  
 ———, East coast of Peninsula (596—17, 92).  
 ———, Gangetic (561—14, 377).  
 ———, geology (1238).  
 ———, mammalian remains in (561—16, Vol. II, 640).  
 ———, Gujarat (148—22, 233).  
 ———, Hundes (1716—3, 17).  
 ———, Indo-Gangetic, average density (1324—77).  
 ———, conditions of deposition (1087—2) (1881—1, 320) (1324—36, 70; —41, 427).  
 ———, effect of, on plumb—line (1324—73).  
 ———, Irrawaddy (1763—16, 227) (1019—2).  
 ———, compared with Gangetic (1763—9).  
 ———, Jumna, permeability of (65—5) (1197—71).  
 ———, sections of (442—1).  
 ———, Karikal (1067—1, 156).

- Alluvium, Kashmir (502—3, 165) (1109—38, 48) (669—24).
- , Madras, (596—8, 14).
- , Narbada valley (1763—2).
- , Nellore district (987—17, 180).
- , Nepal valley (1197—39, 98).
- , Orissa (148—35, 59).
- , Pondicherry, composition (1067—3).
- , section (1067—1, 152).
- , Punjab (1763—24, 141) (1975—17, 122) (1631—2) (1197—81, 27).
- , Purna valley (1975—7).
- , Rangoon, section (1324—39).
- , Runn of Cutch, æolian origin (143—1, 238).
- , Sind (148—63, 72).
- , Southern India (1294—38, 244, 263) (596—24, 75).
- , South Mahratta country (596—12, 233).
- , Surat district (148—44).
- , composition (1975—5, 30).
- , Sylhet (1197—17, 155).
- , Tenasserim, composition (1340—2, 396).
- , Upper Chindwin Valley (127).
- , Upper Indus basin (1712—5, 129) (502—1; —2) (702).
- , Western India (148—37, 99).
- , Yanaon, Godavari (1067—1, 156).
- , older, of Ganges (561—14, 377).
- , origin (1763—9, 19) (1034—43, 198).
- , stream of —, in Chitral (351—6),—see also 'Shwas.'
- Almod beds, L. Gondwana (1197—26, 159).

Altaite, from Wuntho, Burma (1324—54, 110) (1094—4).

Altitude, of Dhawalgiri (337—6).

———, of glaciers in Sikkim (1034—38, 61).

———, of Himalaya (337—2) (892—1) (1078) (399—5, 50).

———, of Himalayan peaks (852) (267—6) (1904—3) (1266) (240, Pt. 1).

———, of K<sub>2</sub>, Mt. Godwin-Austen (1426—5) (351—3).

———, of Mt. Everest (1904—1).

———, of snow-line in Himalaya (337—3) (892—2 ; —7) (900—7 ; —9) (917—2)  
(86—4) (401—2) (1717—5) (1576—6, 279 ; —9, 369) (1745, 409).

———, mean, of Asiatic Continent (1806).

Altitudes, in India and Central Asia (1578—11).

———, in India and Tibet (1576—6) (1574—2, Vol. II).

———, in Karakoram range (351—5, 18).

———, in Nilgiri Hills (1826).

———, of places in Central India (748—3).

———, of places in Kumaon (1906—1 ; —4) (1716—2).

Altum-Artush, geology (1712—31).

Alum, in Ceylon (1335).

Aluminite, analysis of —, from Salt Range (1324—54, 110).

Alunogen, growth of —, on meteorite (1723—2).

*Alveolina*, canaliferous structure of (288—16).

*Alveolina* limestone, Baluchistan (708—4, 22).

———, Sind (148—14, 6 ; —46, 13).

———, geological horizon (1854—19, 86).

Alwar quartzites (730—2, 85 ; —5, 281) (830—6, 29)\*.

———, in Biana hills (830—5, 187)\*.

Alwar State, topography (1423—2).

---

\* See Introductory Note—Supplementary List.

Amarkantak, description (159) (1684—10, 897).

Amb beds, Salt Range (1859—26, 158, 241).

Ambala, artesian well at (189) (1087—2, 192) (1197—36; —61, 232) (1761).

Amber, Burmese, characters and composition (810—1 to 3) (1214—2, 51).

—————, arthropoda in (331a—1 to 9).\*

Ambygonite, occurrence in Kashmir (1159—59).

Amherst district, Burma, caverns in (568—1) (1755—6).

—————, geology (595—4) (1480—2).

—————, mineral water from—, analysis (1511—7).

—————, topography (308—1) (1478—5) (1340—4) (1785—2) (568—1).

—————, tungsten and tin ores in (211a, 103)\*.

Amir shingle beds, Jaisalmer (1324—18, 160).

Ammonite bed of Kuchri, *see* Abur beds.

Ammonite fauna of Cutch (1859—1).

Ammonites, Bagh beds (1854—24; —28).

—————, Himalayan, represented in Alpine Trias (121—2, 141).

—————, Jaisalmer, discovery (905—3).

—————, jurassic, Dr. Gray's type specimens of (388—1).

—————, of Niti pass (86—1, 315).

—————, triassic, from Asia (121—1).

—————, from Kashmir (620—5).

—————, development of (486—24).

*Ammonites robustus*, Strachey, description (388—2).

Amphibia, fossil, in India (1109—39, 64; —75, 68).

—————, Indian pre-tertiary (1109—16; —57).

Amphibian, from Pachmari hills, *see* Bijori Labyrinthodont.

---

\* *See* Introductory Note—Supplementary List.

Amphibole, manganiferous (577—32, 145).

———, new form of —, from Central India (577—2).

Amphibolite, petrology of —, from Kadur district (1649—9, 43).

———, Ladakh (1142—37, 324).

———, Mysore (1915—10, 90).

———, North-Eastern Rajputana (830—6, 90)\*.

———, Sutlej valley (1142—17, 67, 74, 83).

———, Yünnan (1004, 369).

Anamalai, higher ranges of (745—3) (762—2).

Anantapur district, geology (596—31).

———, occurrence of Dharwars in (1915—5, 67)..

Anaram beds, Godavari basin (987—14, 61).

———, geological horizon (987—19, 15).

Andaman Islands, flint arrow tips from (785—2).

———, geology (1712—16) (71—11) (1019—1) (1159—42) (1324—14)  
(1787—9).

———, kitchen-middings in (1712—19) (148—94) (859—47).

———, physical features (1362—1).

———, topography (338—2) (1447) (853) (1263—2; —3) (472—2) (1163)  
(256) (997, 167).

Andesite, altered, from Takht-i-Suleiman, Kashmir (1142—31, 264).

———, petrology of —, Aden (1142—9, 147) (1854—38, 327).

———, Chamba (1142—16, 94, 99).

———, Pahang Volcanic Series (1933a, 454).\*

———, Rajmahal Hills (1142—21, 104, 106).

———, S.-E. Persia (1143, 295) (1854—1, 270).

———, Yünnan, distribution (211—10, 193).

---

\* See Introductory Note—Supplementary List.



- Andesite, petrology (1004, 377) (243—2, 209).
- Angara series, in N. Afghanistan (793—22, 33).
- , in Thian-Shan range (1211—3, 63).
- Anhydrite, conversion of —, into gypsum (859—2, 235 ; —4).
- , included in quartz (859—2, 232).
- , isomorphic with barytes (1675—1).
- Anisoceras beds, Pondicherry (1008—3, 54).
- Ankerite, from Chhindwara (577—32, 121).
- Anomia laurenciana* de Kon., systematic position (1859—13 ; —14).
- Anoplotherium*, from Siwalik hills (562—7).
- Anorthite, *see* Indianite.
- Antelope, fossil, from Siwalik hills (65—7).
- , skull of —, from Hundes (1109—88).
- Antelopes, Siwalik, revision of (1109—61).
- Anthophyllite, in andesite (1143, 298).
- Anthracolithic system (486—14, 1) *see* Permo-carboniferous, Kuling series, Productus limestone and shales.
- Anthracotheres, new species of —, from Baluchistan (606—4).
- Anthronoidea, evolution of (1406—20, 54).
- Anticline, Gwegyo, Burma (1369—3) (372—4).
- , Kabat, Burma (1369—1).
- , Nghlaingdwin, Burma (1417, 255).
- , Yenangyat, Burma, a symmetry of (1369—2).
- Anticlines, jurassic, in Baluchistan (1854—36, 191).
- Antimony, native, from Straits Settlements (1326—67) (1159—28).
- Antiquity of Asiatic elephant (9).
- , of man, in Burma (1311—16 ; —23 ; —29) (148—87) (335) (1324—50) (1733—1 ; —2).

Antiquity, of man, in India (561—14; — 16, Vol. II, 571) (147—16) (1763—21).

———, relations of —, to geological time (793—44)\*.

Ants, gold-digging, *see* Gold-digging ants.

Apatite, from Ceylon (317—2).

———, analysis (935).

———, colouration (936).

Ape, fossil anthropoid, from Siwaliks, Punjab (1109—15).

Apophyllite, from Western India (414).

———, analysis (786—6, 223).

———, measurements (786—8, 113).

Aquamarine mines, Baltistan (1219a)\*.

Arabia, South-Eastern, cretaceous echinodermata from (512—2).

———, geography (288—6).

———, geology (288—7).

———, minerals from (288—2).

———, triassic and permo-carboniferous fossils from (486—34).

———, *see also* Persian Gulf.

——— South-Western, *see* Aden hinterland.

Arabian coast, description (737).

——— sea, pliocene deposits on coast of (288—10).

———, submarine topography (1323—3).

Arabs, mineralogy of the (324).

Arakan, fossil crabs and fish teeth from (1397—2).

———, geological specimens from (1880—4).

———, geology (1369—11, 179).

———, historical and statistical account of (1374).

Arakan, soils of (165—2).

———, topography (1042) (1397—1).

Arakan Coast, appearance of volcanic islands (1535) (1934—1) (797) (1159—60).

———, submarine eruptions (878) (1373) (1914) (1934—2) (1159—22) (754)  
(211—4 ; —6 ; —7).

Arakan system (1311—22, 62 ; —36, 8 ; —37, 5).

Arakan Yoma, coal in (741a—4)\*.

———, passes across (1798—1 ; —2) (1384—1) (1987—6).

Aral R., Sind, reports on (1418—1) (999).

Aravalli quartzite, petrology and origin (1142—14, 103) (1366—3, 262).

Aravalli range, geology (764—2 ; —8, 59) (730—5) (1197—81, 24).

———, physical features (1197—53).

———, rocks from —, petrology (1142—14).

———, section across (764—7, 92 ; —9).

Aravalli system (730—2) (1324—41, 67).

———, Biana hills (830—5, 184)\*.

———, Jodhpur, (1034—28, 16).

———, N.-E. Rajputana (830—6, 15)\*.

———, Patiala (173—21).

Arc, Indian, curvature of (1426—2).

Archæan group, India (596—39, 26) (1854—25, 4) (577—32, 235).

———, classification (859—53, 47 ; —78) (577—55, clxxvii)\*.

———, genesis of ore deposits in (577—36 ; —55)\*.

———, stratigraphical relations (1652—21) (1219—32)\*.

———, Malay Peninsula (1603—13).

Archæan land-surface, in Satpura range (793—28, 31).

Archæan rocks, Chhindwara (793—28, 33).

---

\* See Introductory Note—Supplementary List.

Archæan rocks, Korea State, Central Provinces (577—46, 161).

—————, Mysore, age and classification (1652—24).\*

—————, radioactivity of (1652b)\*.

—————, *see also* Crystalline and Metamorphic rocks.

Archipelago series, Andaman Is. (1324—14, 138) (1787—9, 199).

Arctic flora, elements of —, in Gondwanas (570—19, 196).

'Arenaceous series,' Cutch (1975—11, 78)=Upper Naristage.

Argentina, Glossopteris flora in (148—88) (1017) 1018).

'Argillaceous series,' Cutch (1975—11, 78)=Gaj series.

Argillite, in Dharwar (596—39, 78) (1134—4, 109).

Ariyalur stage (147—8, 125).

—————, geological horizon (1008—3, 58) (1854—26, 193).

—————, *Megalosaurus* from (1109—16, 26).

Arkose beds, Garhwal (1324—22, 160 ; —26, 136).

Armenia, Otoceras beds in (168a)\*.

Arrow heads, flint, from Andaman Islands (785—2).

—————, from Jubbulpore (1732—2).

—————, neolithic, from Ranchi (1961—1, 390).

Artesian conditions, Aden (1159—4, 263).

—————, Baluchistan (1324—38, 48).

—————, Gangetic delta (1666—6).

—————, India (1197—61) (708—32, 29) (1854—2).

—————, Indo-Gangetic plain (1324—13) (1197—70).

—————, United Provinces (1197—67).

Artesian springs (Chamans), Quetta (1324—38, 44).

Artesian well, Agra (1197—70, 120) (1854—2, 39).

Artesian well, Ambala (189) (1087—2, 192) (1197—36 ; —61, 232) (1761).

————, Bhiwani, Hissar (1197—61, 235).

————, Canning Town (1854—2, 44).

————, Chandernagore (1067—1, 157) (1324—40) (1854—2, 46).

————, Coconada (1854—2, 55).

————, Ellore (1854—2, 80).

————, Gogo, Kathiawar (629—2).

————, Karachi (79—1).

————, Karani, Madras (1854—2, 51).

————, Karikal (1854—2, 57).

————, pliocene fauna (367).

————, Kilacheri, deep sea deposit in (1280).

————, Lucknow (1324—33) (1854—2, 30).

————, Pegu (1034—39, 104).

————, Rampur coal-field (1854—2, 77).

————, Sabzalkot, Derajat (1123) (1197—61, 236).

————, Tuticorin (35—3).

————, Vizianagram (987—33, 143).

Artesian wells, Baluchistan (1324—38, 48) (1854—2, 24).

————, Bellary district (501—6).

————, Chittagong (1034—39, 105) (983).

————, in Deccan trap (1854—2, 84).

————, in Gondwana rocks (1854—2, 76).

————, Gujarat (1854—2, 69) (1034—39, 103).

————, Pondicherry (987—20 to 22) (1197—61, 217).

————, Rangoon (1324—39, 66) (1854—2, 62).

Arthropods, in Burmese amber (331a—2 ;—3).\*

—————, *see also* Insects.

Articulite, *see* Itacolumite.

Arts, industrial, of India (132).

Artush beds, Kashgar (1712—28, 81 ; —31, 14).

Aryan group, definition (859—49, 11 ; —58, 49).

Ash beds, *see* Volcanic ash beds.

Asia, Arrowsmith's map of (995—2).

Asia, coal resources of (846—2).

——, desiccation of (1015—3) (897—5 ; —7).

——, glaciation of (1015—1).

——, high peaks of (240, Pt. 1).

——, mineral productions (459—2).

——, morphology of (704—4).

——, orography (892—5, Vol. I).

——, recent geological changes in (1973).

——, salt lakes, deserts and salt deposits (1885).

——, Trias in ——, development (1311—48 ; —54).

——, (Central), *see* Central Asia.

——, (Southern), orography (1724—2, Vol. I, 544 ; Vol. III, Pt. I, 344).

Asian continent, genesis of (457—1).

—————, mean altitude of (1806).

Asiatic elephant, antiquity of (9).

Asiatic origin, of primitive American population (71—23).

Asphalt, from Persian Gulf (514—6).

Assam, acid soil in (1200).

- Assam, blowing-machine used in (1159—12).
- , discharge of rivers in (767).
- , geology of coal-fields (1197—9) (1159—9) (1640—8; —9) (793—18).
- oil-fields (1369—13).
- upper portion of (1134—2).
- valley (1117—7).
- , industries and resources (35—5) (726).
- , method of blasting rocks in (35—4).
- , petroleum industry of —, development (917a).
- , physiography (1578—8) (1108) (857—11, 170; —13).
- , plants from coal measures in (1610—5).
- , rock specimens from (337—5).
- , statistical account of (896—3).
- , stone implements from (1690—2) (331—1) (211—14) (423—7)\*.
- , topography (1861) (1289) (1118—1) (1503—1) (249—1) (1578—3) (1205) (778).
- of upper portion (1926—1; —2) (476—8) (1118—2).
- Assam-Bengal Railway, geological report (793—21).
- Assam range, geology (1197—17, 189).
- , mineral productions (956—2, 233).
- , *see also* Garo Hills and Khasi and Jaintia Hills.
- Assensole, Burdwan, fossil plants from (570—19, 75).
- Asterism, in phlogopite from Vizagapatam (859—37, 23, 67).
- Astor gneiss (1109—26, 5).
- Asymmetry, of Yenangyat anticline (1369—2).
- Atacamite, from Nellore (1159—19, 171).
- Ataran (Atbaran) R., Amherst, analysis of water from (1405—3).

---

\*See Introductory Note—Supplementary List.

- Ataran (Atbaran) R., Amherst, exploration (1877).
- Atgarh (Cuttack) stage, U. Gondwana (148—2, 264 ; —35, 59) (71—27).
- , flora (570—15, 189 ; —19, 68).
- Atlas, physical, of India (225—1).
- Atoll, Diego Garcia (179).
- , Minikoi (634—2 ; —3, Vol. I, 27).
- Atolls, Indian Ocean (634—6 ; —8) (1029) (628).
- , Laccadive Islands (893, 425) (1323—3, 11).
- , Maldivé Islands (1250) (1519) (14—1 ; —2, 482 ; —4, 35).
- , formation of (634—4) (663).
- , openings in (870, 76).
- , *see also* Coral reefs.
- Attock slates, (1860, 333).
- , age of (1859—8) (1975—17, 127 ; —29, 315).
- , Hazara (1975—24, 119) (1219—17, 10).
- Attraction, effect of local —, on geodetic measurements (1426—9 ; —10).
- Augite, in Basti aerolite (1184—6, 151).
- , secondary, in Kolar schist (1652—10).
- Augite-andesite, petrology of—, from Aden (1164, 179).
- , Belgaum (1142—21, 109).
- , Bombay (1142—21, 107).
- , Rajmahal hills (1142—21, 104).
- Augite-diorite, Cochin, correlation of —, with dolerite (1606a—2)\*.
- , petrology of —, from S. India (859—18, 31 ; —24 ; —30, 129).
- Augite-norite, S. India, petrology (859—18, 27).
- Augite-syenite, Sivamalai series, petrology (859—34, 199).

---

\* *See* Introductory Note—Supplementary List.



Aurunga coal-field, geology (71—32).

—————, fossil plants from (570—41, 65 ; —47, 250).

Autunite from Pichhli, Gaya district (1787—13, 258)\*.

Avalanches, N.-W. Himalaya (1745).

—————, mud, *see* "Shwas."

Axial series, Burma (1763—12 ; —13 ; —16, 315) (1311—22, 62).

—————, triassic fossils in (1763—12, 39) (1787—1 ; —3).

—————, Manipur and Naga Hills (1324—3, 218, 223).

—————, *see also* Chin series.

## B

Bababudan hills, Mysore, geology (1649—9).

—————, schists, petrology (1549—6, 66 ; —12).\*

Bababudanite, a variety of riebeckite (1652—13).

Babeh (Bhabeh) series (1712—5, 17) (708—19, 159 ; —20, 53).

—————, age of (793—9, 12).

Backerganj district, topography (639).

Back-waters, Malabar coast (1432).

—————, Travancore (505) (1173—3).

Badakshan, topography (1246, Vol. II, 408) (1958—2, 213 ; —3, 137) (1465—3).

Badalgarh stage, Alwar quartzites (730—2, 86) (830—5, 190).\*

Baddeleyite, Ceylon (592) (142—1).

Bagh beds, Narbada Valley (288—13, 237) (148—22, 207 ; —37, 89).

—————, ammonites of (1854—24 ; —28).

—————, discovery of fossils in (966—2).

—————, echinodermata (512—2, 357 ; —3 ; —9) (611a).\*

---

\* *See* Introductory Note—Supplementary List.

Bagh bads, sub-division (173—5, 35).

———, Baroda (596—40, 42).

———, Gujarat (1763—27, 5).

Baghanwala stage, *see* Bhaganwala.

Baglakonda hill, Guntur, supposed volcano in (834—2, 227).

Bagra stage, Mahadeva series (1197—26, 150).

Bahiaite, analysis of —, from Charnockite series (1893*a*, 330).\*

Bahawalpur State, physiography (79—2).

Bahraich district, topography (1832).

Bahrain I., Persian Gulf, topography (1917).

Bahrain series, eocene (1406—10, 20).

Bairenkonda quartzite, Cuddapah (987—7, 212).

Bajgah, Afghanistan, fossil shells from (789).

Bakhtiyari series, pliocene (1406—10, 52).

Balaghat district, geology (577—23).

Balaghat gneiss (987—17, 125).

Balangoda group, Ceylon (356—14).

Balehdhura pass, Kumaon, visit to (1912).

Ball-coal, Burdwan (1405—30; —32; —36) (866—4).

Ball-trap, petrology (1142—21, 105, 108).

Balmir sandstones, *see* Barmer.

Baltistan, aquamarine mines in (1219*a*).\*

———, crystalline rocks (1109—38, 307).

———, geology (1109—26).

———, physical features (451—2, Vol. I, 132).

———, topography (1862—1, 592) (1846—2; —4, Vol. II, 105) (722—2) (1967—1) (1395).

---

\* *See* Introductory Note—Supplementary List.

Baltistan, *see also* Karakoram range, Mustagh range, etc.

Baluchistan, artesian wells in (1324—38, 48) (1854—2, 24).

—————, cretaceous-eocene succession in (1311—41).

—————, cretaceous fauna (1311—19; —25; —26) (423—5).

—————, geology (900—8) (354—1 to 4) (258—23, 184) (708—4; —27, 6; —29 7) (1854—36).

—————, jurassic fauna (1311—20).

—————, occurrence of *Physa prinsepji* in (1854—23).

—————, Orbitoides beds in (1854—26).

—————, orographical map of (857—7).

—————, physiography (1055—2) (1780) (857—11, 24).

—————, sub-recent and recent deposits in (1324—38).

—————, subterranean water supply (79—1).

—————, tertiary echinoidea (513—1).

—————, vertebrata (606—1 to 5) (1406—9; —11; —14).

—————, topography (1189—1; —2, 281) (883) (134—5).

—————, Trias, occurrence of *Halorites* in (1854—11).

—————, triassic ammonites (1787—4).

—————, fauna (486—28).

—————, (Eastern), geological map (1854—35).

—————, geological specimens from (1197—52).

—————, geology (1845—3) (148—78) (1324—32; —37) (708—26; —31, 51).

—————, physical features (123—1) (1755—3).

—————, topography (1756—1; —2) (1894—1).

—————, (Western), geology (1143) (1854—1).

—————, topography (673—3, Vol. I, 18, 119) (594) (1512) (306—13, Vol. II, 300).

Balwari beds, Narbada valley (148—22, 298) (173—5, 16).

- Bamian valley, Afghanistan, description (709—4, 398) (965) (793—20).
- Banda district, geology and topography (529—1).
- , stone implements from (331—1, 137) (1490—2).
- Bandar coal-field, geology (888—20, 145).
- Bangalore district, geology (894—13) (937—2, 184 ;—6) (1606—2 ;—4).
- Bangalore gneiss, petrology (1915—8) (937—6, 81).
- Banganapalli, Kurnool, composition of diamond conglomerate at (1776—2 ;
- , geology and topography (1294—8).
- Banganapalli stage, Kurnool series (987—6, 8 ;—7, 87).
- Banka I., supposed adulteration of tin from (1436—9).
- Bankura district, geology and physical features (148—2).
- Bannu district, geology (369) (1839—1).
- Banswara State, geology (1034—39, 116).
- Bap, Rajputana, boulder beds at (1324—16, 123 ;—25).
- Barail range, Assam, former glacial action in (669—20).
- , geological structure (1197—9, 432).
- Barakar, Burdwan, pot-holes near (570—21) (71—30).
- Barakar stage, L. Damudas (1326—32, 211).
- , flora (570—19, 73).
- , Bandar coal-field (888—20, 147).
- , Beddadanol coal-field (987—10 ;—11).
- , Chhatisgarh basin (987—32, 194).
- , Daltonganj coal-field (888—9, 332).
- , Kamaram coal-field (987—8, 50).
- , Karharbari coal-field (1545—8, 89).
- , Korea State, C. P. (577—46, 171).
- , Mohpani coal-field (1197—21, 65).

Barakar stage, Pench R. coal-field (1676).

———, Rampur coal-field (1466—3, 95).

———, Raniganj coal-field (148—7, 46).

———, Rewah basin (888—29, 152).

———, Satpura basin (1187—26, 162) (952—3, 20).

———, Tawa valley, Betul (1197—38, 75).

———, Upper Godavari valley (888—22, 19).

———, Wardha valley (888—20, 18).

Baramula gorge, Kashmir, origin (1321—1, 24).

Barda hills, Kathiawar, igneous rocks of (11, 32).

Barisal guns, area of audibility (252—2) (1599) (1589).

———, atmospheric cause of (1867—2).

———, frequency (35—6).

———, gaseous theory of origin (987—45) (1154).

———, hypothetical causes (1381—1) (85) (1894—2) (1166) (1830—1; —2).

———, seismic origin (1452—3) (1034—11; —16) (669—32) (1324—59, 200).

———, volcanic origin (1452—5).

Barmer (Balmir) sandstones, Marwar (148—50, 18) (1034—28, 33).

Baroda State, geology (596—40).

Baroghil pass, Hindu Kush, geology (793—34, 290).

Barometer, effects of Krakatoa eruption on (147—23).

Barrah hill, Sind, section of (1854—26, 185).

Barren I., bibliography (71—41, 17) (1159—54; —55).

———, condition in 1787 (338—8); in 1832 (7—3); in 1842 (1117—26) (1229)  
in 1846 (1159—61); in 1857 (1411) (1263—2, 114; —3, 153); in  
1858 (1070); in 1862 (1362—1, 216); in 1866 (602); in 1873 (71—16,  
—43, 397); in 1884 (71—66; —70) (845); in 1891 (1424—1; —2)  
in 901 (997, 9).

———, soundings in neighbourhood of (1159—48).

- Barytes, isomorphic with anhydrite (1875—4).
- Basal beds, Siwalik, mammalia from (1406—23).\*
- "Basal stage," L. Vinchyan (1325, 13).
- Basalt, Aden, petrology (1304, 556) (1835, 40) (1142—9, 145) (1164, 174) (1854—38, 320, 334).
- , Bombay, occurrence (228—41, 170, 205) (320—2) (1975—4, 195).
- , —, —, petrology (1142—7).
- , —, —, *see also* Deccan trap.
- , Jade mines, Burma, petrology (88—4, 105).
- , Kiblung R., Burma (1326—47, 331).
- , Mandi State, Kangra, petrology (1142—30).
- , Mysore, petrology (1915—10, 68).
- , Narbada valley, petrology (173—5, 51).
- , Pavagad hill, Panch Mahals, petrology (577—12, 151).
- , Perim I., Gulf of Aden, petrology (1454—4, 133;—2, 207).
- , Raipur district, C. P. (178—8, 59).
- , Rajmahal hills (1326—9, 270) (71—20, 215).
- , Tichu valley, Waziristan, petrology (793—4, 68).
- , Western Baluchistan, petrology (1143, 301).
- , Yunnan, petrology (1004, 370) (243—3, 200).
- , altered, Chambu, petrology (1142—10;—16, 94).
- , —, —, Són valley, petrology (1325, 80).
- , —, amygdaloidal, Kashmir (1839—2, 228).
- , —, columnar, Bombay (57).
- , —, green, used in colouring stucco (35—7).
- , —, pleistocene, N. Shan States (1034—24, 42;—45, 313).
- , —, silicified, Hyderabad (741a—2).\*

\* See Introductory Note—Supplementary List.

**Bashahr**, geology (1712—5) (793—9).

———, physical features (684—2) (1151—1).

———, topography (649) (1079) (647—1 ; —3) (648) (855, 384).

**Basic dykes**, *see* Dyke rocks.

**Bassein series**, Burma (1311—36, 9 ; —37, 6) (409, 617).

**Bastar district**, geology (708—32, 40).

———, physical features (857—2).

**Batang**, W. China, topography (476—4).

**Batissa**, occurrence in Yenangyaung oil-field (1369—6)

**Batrachia**, fossil, distribution in India (1109—24, 16).

———, in intertrappean beds, Bombay (320—1) (1353—2) (1712—17).

**Batrachian**, Siwalik (279) (1117—27) (1109—36, 195).

**Batticaloa district**, Ceylon, orography (1069—1).

**Bauxite**, use of term (390—4).

**Bawar series**, Jaunsar (1324—5, 197 ; —26, 137).

**Bawdwin**, N. Shan States, geology (1035) (211—20)\* (1094a—1)\*

———, description of mines at (845a)\*.

**Bawdwin volcanic series** (1035, 239) (1034—45, 55) (211—20, 139)\*

**Baxa**, Bhutan Duars, geology (669—7).

**Baxa series** (1159—6, 33) (1406—6, 25).

**Bay of Bengal**, soundings in —, near Barren I. (1159—48).

———, volcanoes in (228—13) (71—41 ; —66 ; —70).

———, *see also* Barren I. and Narcondam.

**Bazar valley**, N.-W. Frontier, geology (793—4).

**Beach**, consolidated, near Colombo (2).

———, raised, *see* Raised beach.

Beach deposits, Bombay (288—8, 206).

—————, *see also* Littoral Concrete.

Beads, agate, from N.-W. India (1763—8).

Beas valley, geology (1197—5, 57).

Beccarite, variety of Zircon, Ceylon (695).

Beddadanol coal-field, geology (987—10).

Bedesar beds, Jaisalmer (1324—18, 158).

Beekite, from Punjab (932).

Behar, *see* Bihar.

Beldongrite, characters and composition (577—32, 115).

Belemnite beds, Baluchistan (1324—37, 19).

—————, fauna (1311—25).

—————, Shirani hills (1034—20, 83).

Belemnitidæ, cretaceous, S. India (147—6).

Belgaum district, geology (51—1 ; —2).

Bellary district, artesian wells in (501—6).

—————, composition of earth salt from (1301—1).

—————, geology (596—31 ; —30).

—————, neolithic settlements in (596—32, 268).

—————, sand dunes in (1294—12).

—————, scoriaceous mounds in (1294—7 —28) (336—3) (596—32, 261, 272) (1612).

—————, topography (975).

Bellary gneiss (987—17 125) (596—39, 28).

Bellerophontidæ genera of (1859—24, 260)

Benares, section of alluvium at (35—8).

—————, shelly "kankar" from (1624—1).



Bengal, coal mining industry (646—1).

—————, *see also* Collieries.

—————, correlat on of rock systems in —, with Central India (1326—23 ; —32).

—————, effects of earthquake, June 12, 1897 (168).

—————, geography of —, in Muhammadan period (156—3).

—————, geological history of alluvial plain (1854—34).

—————, geological map of, 1852 (1625—11).

—————, geology (557—1) (867—6, Vol. I).

—————, mineral productions in 1829 (956—2).

—————, physiography (1117—37, 17).\*

—————, Rennell's atlas of (1473—1) (840).

—————, rivers (1034—36) (113) (1625—16).

—————, changes in (576—2) (43) (794a).\*

—————, control of (401—3) (908).

—————, soils, composition (1244).

—————, stone implements in (71—1 ; —3).

—————, topography (1473—3, 43) (749, Vol. I) (896—2).

Bengal gneiss (1326—3, 116) (1193, 17).

—————, analysis of (1344).

Benza, Dr. P. M., obituary notice (336—4).

Berars, geology and physical features (1107).

Berlin, International Geological Congress at (148—77).

Beryl, inclusions in (1142—13, 58).

Betamcherla trap, petrology (1025—4, 261).

Betul district, geology (7—2, 56) (584—2) (148—13).

—————, topography (1225).

---

\* *See* introductory Note—Supplementary List.

- Betwa R., fossil bones from (1845—1; —2).
- Betwa series, U. Vindhyan (1854—17, 259).
- Beypur, Malabar, Warkalli beds at (1294—17).
- Bezwada gneiss (596—17, 25) (987—18, 206; —33, 150).
- 'Bhabar' land, definition (1197—27, 11).
- Bhagalpur district, springs and wells in (222—18).
- , topography (1181, Vol. II, 1) (1625—14).
- Bhaganwala stage, Salt Range (1311—15, 80)-Salt Pseudomorph Zone.
- Bhagirathi R., sources of (619—3).
- Bhamo, geology of country N. of (708—22) (211—10).
- Bhander series, U. Vindhyan (1326—12, 251) (1197—2, 52) (1159—3, 80).
- , sub-divisions of (1854—17, 259).
- 'Bhangar' land, definition (1197—27, 9).
- Bharatkhand, Chittagong, burning well at (1957) (906) (1034—36, 177) (867—Vol. II, 352).
- Bharatpur State, geology (764—6).
- Bhavani dam, Coimbatore, report on site (859—32).
- Bhavnagar, Kathiawar, mammalian fossil from (423—14).\*
- Bhiaura series, Bihar (1159—7, 37).
- Bhima series, Deccan (596—12, 139).
- Bhitri series, Jubbulpore (1326—71, 9).
- Bhiwani, Hissar, artesian boring at (1197—61, 235).
- Bhot Mahals, Kumaon, geology (708—20, 150).
- , physical features and productions (1797—4).
- Bhusawal, composition of zeolites from (1675—2).
- Bhutan, geology of a portion of (1384—3) (1406—6).
- , physiography (709—2; —4, 197) (669—31).

---

\* See Introductory Note—Supplementary List.

Bhutan, productions of (1559—1).

———, topography (1816) (1384—2 ; —4) (172) (528) (1920—1, 105 ; —2).

Bhutan Duars, geology (669—10).

Biana hills, Rajputana, geology (764—1) (830—5).\*

Biana stage, Alwar quartzites (730—2, 86) (830—5, 191).\*

Bibliography, Barren I. and Narcondam (1159—54 ; —55).

———, Cutch and Rajmahal fossil flora (570—6).

———, Himalayan geology and micro-petrology (1142—24).

———, Indian geology and physical geography (1324—29a) (1034—46).\*

Bidar laterite, geological position (1294—18).

Bihar, geology (1181, Vol. I, 241) (1625—4) (867— ) (1489—3).

———, physical features (867—1 ; —6, Vol. I).

———, topography (1181, Vol. I) (1625—6).

———, well-sinking in (913—1).

Bihar transition series (1197—19) (1159—7, 36).

Bihar and Orissa, fossil flora of coal-fields (570—53).

Bijaigarh shales, Kaimur series (1159—3, 49).

Bijapur district, geology (1294—23, 938 ; —24) (596—12).

———, rock specimens from (1484—1).

Bijawar system (1197—2, 6, 35).

———, Jubbulpore district (173—11).

———, Narbada valley (148—22, 197) (173—5, 10).

———, Son valley (1325, 4).

Bijori Labyrinthodont, description (1109—40 ; —56).

———, discovery (842—10, 282 ; —11) (147—13) (1226—33) (1636)

Bijori stage, U. Damuda (1197—26, 159).

Bijori stage, flora (570—38, 76).

Bikanir State, depth of wells in (1197—61, 230).

—————, Laki series in (1854—31).

—————, physical features (1131—2).

—————, topography (1423—1).

Billa Surgam Caves, Kurnool, exploration (596—26 ; —27 ; —30).

—————, fauna (1109—67 ; —68).

—————, ossiferous breccia in (1294—81 ; —37).

Biotite-kyanite-cordierite rock, Sutlej valley (1142—82).\*

Birbhum district, topography (1625—15).

Birds, fossil, distribution in India (1109—24, 22 ; —39, 68 ; —75, 63).

—————, Siwalik (1109—19 ; —48 ; —85).

—————, coll. British Museum (434).

Bisrampur coal-field, geology (71—15).

'Bit-nobin' ('Salt of bitumen'), composition (6) (816).

—————, *see also* "Silajit."

Bituminous salt, Kohat (1975—15, 129) (1723—12, 64).\*

—————, natural gas from (1723—14).\*

————— shales, Kota (561—13).

Black cotton soil, *see* 'Regur.'

Black Mountain, Hazara, geology (1219—17, 248).

Blaini series, Simla (1197—5, 30) (1142—1).

—————, age and correlation (1324—26, 134) (240, 225) (859—68, 131).

—————, glacial origin (1324—21, 144 ; —22, 156) (859—68).

Blanford, W. T., obituary notice (20—2).

Blanfordite, characters and composition (577—14, 78 ; —32, 125) (793—35, 13).

---

\* *See* Introductory Note—Supplementary List.

- Blödite, from Salt Range (1570) (1159—57) (612—1).
- Blowing machine, Upper Assam (1159—12).
- Blown sand, *see* Sand dunes.
- Blyth, T. R., obituary notice (793—23).
- Bogdo-Ola, E. Thian-Shan, physiography and geology (1211—3).\*
- Boileauganj quartzites, Simla (1197—5, 34) 1324—21, 147 ; —26, 135).
- Bokaro coal-field, geology (1935—2, 21) (888—2).
- 'Boke,' in Ahmadabad district (629—7).\*
- Bokhara, geology and physiography (235—18, Vol. II, 153).
- , fossils from (133—2, 700) (163).
- , tertiary gold-bearing conglomerates in (1010—1).
- , topography (236).
- Bolan pass, description (349—1, Vol. II, 219) (35—9) (709—4, 329) (1173—13).
- , geology (900—8, 565) (354—1) (708—4, 4) (148—72).
- Bologna, International Geological Congress at (148—70).
- Bombay, character of rocks near (148—38).
- , geology (288—11) (288—8) (1975—1) (530).
- , igneous rocks of —, petrology (1142—7 ; —21, 107).
- , intertrappean beds (320—1) (288—8, 162 174) (228—11, 196 ; —21 (1053—1 ; —2, 16) (1975—1, 193 ; —6).
- , fauna (1353—1) (1712—17) (697).
- , submerged forest (1343) (1209) (1034—47).\*
- note on wood from (1704—3).
- , topography (1812—2) (1053—2).
- , water supply (352) (1812—1).
- Bombay Islands, geology (1775—2) (288—23, 167).
- Bombay Presidency, analyses of waters from (662).

---

\* *See* Introductory Note—Supplementary List.

Bombay Presidency, geology (148—37).

—————, soils of —, composition (342).

—————, *see also* India, Western.

Bombite, characters and composition (448—5, 30) (1038—1, 178).

Bommanhalli schist-belt, Mysore (1549—3. 33 ; —10).

Bonai State, topography (410—1).

—————, water fall in (1564—2).

Bones, fossil, *see* Fossil bones.

Bore, in Gulf of Cambay (552—2) (944—2).

Boring, Calcutta, *see* Calcutta boring.

—————, on beach at Madras (1752).

—————, *see also* Artesian wells.

*Boselaphus namadicus*, Rütim, from Narbada (1406—8).

Boulder, enclosed in coal seam, Bengal (859—63).

————— trap dyke, Karharbari (1545—3 91).

—————, striated, from Blaini beds, Simla (859—68).

—————, from Salt Range (148—79) (548).

Boulder bed, Blaini, *see* Blaini series.

—————, lower Jaunsar series (1324—26, 132).

—————, Salt Range, age and correlation (148—78, 253) (1109—69, 134) (1859—19, 30).

—————, composition (1006—7, 448).

—————, *Conularia* in (1859—19) (1324—17) (1197—75, 1 ; —76) (1975—33 ; —34 ; —38) (1892—24).

—————, faceted and striated pebbles from (1975—36) (148—79) (1892—16) (1911) (548) (1899).

—————, geological horizon (1975—18, 92, 103) (1892—14) (1859—26 114) (1007—1, 45, 97).

—————, glacial origin (1311—24) (1006—4) (1007—1, 72).

Boulder bed, Salt Range, petrology (1219—16).

———, stratigraphical relations (1219—14, 21).

———, Talchir, character (150, 47) (987—8, 51) (708—1, 143) (148—80).

———, compared with Permian breccias in England (1324—45).

———, correlation (1859—19, 34) (1810, 116).

———, glacial origin (148—33, 324 ; —40) (569—8) (147—21).

———, represented in Africa and Australia (1326—32, 209) (570—44)  
(708—2, 90, 93) (148—78, 251) (1324—15, 42).

———, trans-Indus Salt Range (1975—28, 237, 239).

Boulder beds, Cutch, æolian origin (143—1, 230).

———, Rajputana (148—50, 13, 17) (1324—16, 123 ; —25) (1034—28, 31).

———, pre-tertiary glacial —, distribution in India (1324—20, 300).

Boulder clays, Fed. Malay States (1603—27, 145).

———, alteration of —, by granitic intrusions (1603—35).

———, origin (957—4) \*(1603—40).\*

Boulders, facettèd, from Salt Range (1324—23 ; —55) (911) (1714) (1859—24, 148)  
(1006—4 ; —8, 450) (1007—1, 72, 97) (1399).

———, in Patna alluvium (1333).

———, striated, in Talchirs (569—8).

———, travelled, in S. India (1294—36 ; —40).

———, *see also* Erratics.

Boundaries, geological, in Sind (1854—20, 180).

Boundary, tertiary—Himalayan, Punjab (1975—13, 69).

Boundary fault, Himalaya, *see under* Fault.

Bovidæ, fossil, of India (561—16, Vol. I, 280).

Bowenite, from Afghanistan (1142—29).

———, from Idar State (793—28, 11).

---

\* *See* Introductory Note—Supplementary List.

Bowenite, from Shigar, Kashmir (1142—37, 312).

*Brachyops*, note on genus (203a).\*

*Brachyops laticeps* Owen, description of (1353—4).

Brahmahund, Assam, description of (96—1) (1926—2, 351) (709—1, 326 ; —4, 25).

Brahmaputra R., course of (1473—3, 275) (749, Vol. I, 13) (559) (1020) (476—5).

—————, lower course of (1473—2, 116) (1034—36, 144).

—————, changes in (576—2, 333).

—————, source of (995—1, 318 ; —4) (806—9, Vol. II, 89).

—————, upper course of (35—10 ; —11) (476—1, 322, 431) (134—2) (782, 217) (819, 368) (806—9, Vol. I, 276).

—————, *see also* Tsang-po, Dihong R., and Lohit Brahmaputra.

Braldu, Kashmir, geology (1109—26, 14).

Braunite, characters and composition (1159—17) (577—32, 52).

—————, crystals of (577—38).

Breccias, Bombay (1975—1, 190).

—————, Malani volcanic series (1034—28, 89).

—————, Pahang volcanic series (1933a, 503).

—————, calcareous, Baltoro glacier (451—2, 433).

—————, eocene, Baluchistan (1854—20, 178).

—————, ossiferous, *see* Ossiferous breccia.

Breunnerite, phenocrysts of —, in peridotite (859—36, 3).

*Breynia multituberculata* Vred., description (1854—21).

Brine, remarkable temperature of (1434—2).

—————, Sambhar lake, analysis (1892—17 ; —18) (859—3, 247).

Brine pits, Karakash valley (1615—1, 97) (814) (815, 88).

Broach district, geology (148—53).

---

\* *See* Introductory Note—Supplementary List.



Bromine, in thermal spring, Kangra (1168—5).

Bryozoa, attached to *Neptunea*, Makran (241).

Budavada stage, U. Gondwana (596—17, 70).

Bugti hills, Baluchistan, geology (1845—3) (148—73).

—————, vertebrate fauna of miocene beds (606—1 to 5) (1406—9; —14).

Bundelkhand, geographical position of places in (616—2).

—————, geology (7—2; —4) (926—3, Vol. I, 399).

—————, physical features (616—1, 273).

—————, Vindhyan system in (1197—2) (1159—3, 88) (1854—1a, 267).

Bundelkhand gneiss (1198, 10) (1854—25, 6).

—————, petrology (1142—31).

Bunodont Suina, Siwalik and Narbada (1109—46).

Burdwan district, ball coal from (1405—30; —32; —36) (866—4).

—————, 'Kankar' from —, analysis '1405—66).

Burendra pass, Bashahr, route to (1079) (900—2).

Burma, alleged <sup>miocene</sup><sub>pliocene</sub> man in (1311—16; —28; —29) (335) (1324—50) (148—87)  
(1738—1; —2) (1369—11, 53).

—————, gem sands from (1405—21) (1854—6).

—————, geography (1987—3).

—————, geology (1326—17) (1763—16; —33) (1499) (409) (1369—11).

—————, *see also* Henzada, Prome, Yenangyaung, etc.

—————, hydrography (83—3).

—————, *see also* Irrawady R.

—————, labour in oil-fields (583).

—————, limestone caves in (33).

—————, mineral production in 1905 (426).

- Barma, mineral resources (1185—1) (625—7) (501—5) (1721) (1186, Vol. I) (9a)\*.
- , mining industry (305).
- , miocene in (1311—36).
- , fauna (1311—21 ; —37) (372—2).
- , native map of (222—4).
- , Nummulites from (372—7 ; —8).
- , occurrence of *Ostrea latimarginata* in (1855).
- , Pegu-eocene succession in (372—6).
- , physiography (221) (857—11, 171).
- , soils, composition (1511—3).
- , absorption of lime by (1891a).\*
- , stone implements from (1763—5 ; —7) (1135—2) (1397—4).
- , tertiary group in (1311—22 ; —37, 4) (1723—6) (1406—13, 196).
- , tin ore deposits (35—90).\*
- , see also Cassiterite.
- , topography (744, Vol. II, 26) (1387—2) (1738—1) (22—2) (386—2 ; —1) (1583) (626).
- , tungsten ores in (709a—1 to 3)\* (211—21 ; —24)\* (211a).\*
- , literature of (1815a).\*
- , (Lower), native maps of (222—8 ; —12 ; —14).
- , physiography (1172).
- , topography (1680) (740—2).
- , Trias in (1763—16, 315) (1787—1 ; —3).
- (Upper), geology (191) (1511—11) (1034—45) (1094a—2).\*
- , mining exploration in (818).
- , native maps of (222—7 ; —9 ; —10 ; —11 ; —13).
- , physiography 29—2, 59.)

---

\* See Introductory Note—Supplementary List.

- Burma, topography (1478—3) (1335) (709—4, 60, 123) (1987—4) (1601) (1909)
- Burmese amber (Burmite), composition (1810—1 to 3) (1214—2, 51).
- , insects in (331a—1 to 9).\*
- Burmo-Chinese frontier, geography (435).
- Burning well, Chittagong (1957) (1034—36, 177) (906) (867—6, Vol. II, 352).
- , Jawala Mukhi, Kangra (1246, Vol. I, 69) (881—1, 187; —3, Vol. I, 85) (647—2, 130).
- , Muktinath, Nepal (1243—12, 356).
- Buxar, analysis of soil from (1436—14).
- Byans, permo-carboniferous fauna (436—18, 114).
- , triassic fauna (486—23; —26) (1011).
- Byans pass, geological notes on (1114).
- Byrenconda quartzites, *see* Bairenkonda.

## C

- 'Cabook,' *see* Laterite, Ceylon.
- Cachar Hills, effects of earthquake, January 10, 1868, in (669—15; —16).
- , geology (1034—3, 202) (793—21).
- , *see* also Barail range.
- Calaite (stony turquoise), description (585, 25).
- Calamine, from Tochi valley (793—1, 69).
- Calcareous region, Baluchistan (1854—36, 191).
- tufa, *see* Travertine.
- Calc-gneiss, origin (1219—32, cxoviii).\*
- Calciophyre, Chhindwara (577—6, 192).
- , Ruby mines, Burma (208, 206).

---

\* *See* Introductory Note—Supplementary List.

Calcutta alluvium, depth of (1117—21).

———, estuarine oyster bed in (1854—14) (32) (1297).

———, section of (147—12).

——— boring, in 1814 (526).

———, in Fort William (1197—61, 220).

———, coal from (1135—2).

———, fossil bones in (1436—29).

———, progress reports (1279—1 ; —2) (1436—7) (1720)  
(260—2) (1753—1 ; —2) (1135—1 ; —3).

———, scientific results (1117—21) (1666—3).

———, fossil wood at Ballyganj (148—11).

———, salt-water lakes, reclamation (1740).

———, sub-fossil polyzoon from (1895).

———, water supply (913—2).

Calderite, characters of (1405—38 ; —42).

———, composition (1159—50; 89) (577—32, 182).

Caldron valleys, Shan plateau (1034—45, 25).

*Camarocrinus asiaticus*, Reed, systematic position (1470—9).

Cambay, Gulf of —, see Gulf of Cambay.

Cambrian, doubtful, in Kashmir (1219—28, 211).

———, in N. Shan States (1034—45, 47) (1094a—2, 209).\*

———, Salt Range (1975—18, 86 ; —21, 353) (987—42) (1859—26, 89) (1219—14,  
24) (620—1).

———, fauna (1859—26, 94) (1468).

———, subdivision and correlation (1311—15) (1865).

———, Spiti (708—19, 159) (793—9, 8).

———, fauna (1470—4).

---

\* See Introductory Note—Supplementary List.

Cambrian, Yünnan (1167—1;—2) (1031, 331) (211—13, 99) (468—6;—7\*;—8\*).

———, fauna, distribution (1470—5, 5).

Camel, fossil, Siwalik hills (65—4) (562—3) (447—1;—2) (518—2).

———, second species of (1109—58).

Camelidæ, Siwalik (292—12).

Camelopardidæ, Siwalik (1109—32).

Canals, in United Provinces (292—13 to 16).

———, retrogression of level in 1631—1).

———, statistics of —, in India (109).

Cancrinite, from Kishangarh (1854—10).

Candite, from Ceylon, analysis (667—1).

Canning Town, artesian well at (1854—2, 44).

Cañons, submarine, of Ganges and Indus (1781).

———, see also 'Swatch of No Ground.'

Car Nicobar, description (746).

Carbonaceous shales, Simla (1324—21, 147).

Carbonaceous system, Himalaya (1324—26, 133).

———, correlation (1324—26, 139) (793—30, 139).

Carboniferous, Kashmir (1219—28, 217) (793—17).

———, Safed Koh, Afghanistan (708—21, 71) (793—4, 108).

———, Spiti and Bashahr (793—9, 35).

———, Thian Shan (1066—2).\*

———, Yünnan (1031, 333) (211—13, 100).

———, see also Anthracolithic, Permo-carboniferous, Productus limestone, etc.

Carboniferous shale series, Chitral (793—34, 287).

*Cardita beaumonti*, d'Arch., occurrence in Burma (1787—3).

---

\* See Introductory Note—Supplementary List.

*Cardita beaumonti* beds, Sind (148—83, 34).

—————, geological horizon (148—73, 108) (1854—20, 173 ;  
—26, 192, 195).

*Cardium* (?), fossil, from Makran (1704—5).

Carnatic, geology (988) (987—17).

Carnatic gneiss (987—17, 125).

Carnic stage, Himalaya (486—39, 287).

—————, fauna, Byans (486—21 ; —23 ; —26).

—————, Painkhanda (486—37).

—————, Spiti (486—33, 46).

Carnivora, extinct, history and comparative anatomy of (173—2).

—————, Siwalik and Narbada (66—2) (173—1 ; —3) (1109—44).

Cartography, geological, unification of (1197—62).

Cassiterite, Burma, distribution (211—22)\* (211a)\*.

—————, in Ceylon (357—2) (358—4).

—————, in Malay Peninsula, characters and origin (1603—23) (957—5 ; —6)\*.

—————, in Straits Settlements (753—1).

—————, secondary twinning planes in (946).

—————, *see also* Tin ore.

Cassiterite-granulite, Hazaribagh (577—11).

Catchment areas, mean coefficient of discharge from (384—2).

Cat's eye, Ceylon, analysis (996—4).

Cauvery basin, physical features (1173—11).

————— dam, geology of site (68—5).

————— delta, changes in (188—2, 181).

————— falls, description (1829—1, Vol. I, 448) (943) (188—3, 724).

Cavern, Belilal-ge, Ceylon (779—1).

Cavern, Billa Surgam, Kurnool, exploration (596—26 ; —27 ; —30).

—————, fauna (1109—67 ; —68).

—————, ossiferous breccia in (1294—31 ; —37).

—————, Bhuhari, Khasi Hills (522) (1598—3) (1880—1, 322 ; —2 ; —3, 510) (253).

—————, Borra, Vizagapatam (987—33, 154).

—————, Mong Hung, S. Shan States (1962—2, 581 ; —3, 201).

—————, Shwe Malé, Upper Burma (1326—17, 330).

—————, Wellawaya, Ceylon (438—8, 420) (416—1).

—————, in sandstone, Kyuntali, Arakan (1763—16, 310).

—————, in Vindhyan limestone, Bundelkhand (1197—2, 33).

Caverns, Adam's Peak, Ceylon (1705—3).

—————, Amherst district, Burma (35—65) (595—4, 273) (1156) (157) (568—11) (1755—6).

—————, Burma and Malay Peninsula (33).

—————, Ceylon (438—8, 30, 377, 420).

—————, Elephant Rock, Kodaik (1884—3, 165).

—————, Kashmir (1109—38, 31).

—————, Mergui Archipelago (286—2).

—————, Phoenga, Junkseylon (1097—1).

—————, Selanger (411—2) (1482—4).

—————, Shahabad district (1181, Vol. I, 524) (1625—5, 282).

Cawnpore, soils, analysis (1043—3).

Catal districts, physical features (1294—13, 113).

Celt, neolithic, from Coorg (147—17).

—————, from Jashpur (1961—2).

—————, quartzite, Narbada gravels (1197—28 ; —29).

—————, from Shillong, Assam (669—21).

Celts, Bundelkhand (1056).

Celts, Burma (627) (1185—2).

—, Khangaon, C. P. (282).

—, Naga Hills, Assam (1690—2).

—, limestone, from Punjab (1763—31) (1734).

—, *see also* Implements, stone.

Cenomanian, Karakoram 1690a—2)\*.

Central Asia, ancient geography (1273) (622—1).

———, exploration (529—2) (1986—1) (427) (806—4 ; —7 ; —9).

———, fossils from —, coll. Stoliczka (1725, 439).

———, geology (164—2 ; —3) (59).

———, glaciation (933, 257).

———, origin of deserts in (478).

———, orographical structure (1281) (1324—76).\*

———, orography (892—6) (1561—2) (669—25) (1253—2) (1318) (1015—2, 332).

———, physiography (1755—5) (806—5 ; —8).

———, rock weathering and deflation in (1319—2).

———, triassic fauna of (133—2).

———, volcanoes in (892—3, 332 ; —4, 337).

———, *see also* Asia, Turkestan, etc.

Central gneiss, Himalaya, constituents and origin (1712—5, 12) (1808—1) (1142—4, 44) (1324—24).

———, geological horizon (1109—13, 59).

———, intrusive character (1142—8, 143 ; —16, 104) (793—9, 8).

———, petrology (1142—1, 216, 222).

———, Kashmir (1109—38, 266).

———, Kulu and Lahaul (1142—2, 65).

---

\* *See* Introductory Note—Supplementary List.



Central gneiss, Sutlej valley (1324—26, 130 ; —27, 150).

———, Zangskar range (1109—22, 57).

———, *see also* Gneissose granite.

Central India, distribution of Vindhya in (1326—12).

———, geology (764—7) (616—3) (1197—37).

———, parallelism of fault lines in (1199—2).

———, rock-systems of —, correlated with Bengal (1326—23 ; —32).

———, stone implements from (1946).

———, topography (1473—3, 128) (895—1) (1157) (1576—2 ; —7).

Central Provinces, Charnockite in (741a—3).\*

———, geology (1555—1) (1573—4, 105) (690, xxvi) (1326—69).

———, mineral resources (577—54).\*

———, plant-bearing series in (842—4 ; —7 ; —8).

———, reptilian remains in (842—10).

———, *see also* Chhindwara, Nagpur, etc.

*Cephalogale shahbazi* Pilg., correction of nomenclature (1406—15).

Ceratite beds, Salt Range (1975—18, 96) (1859—26, 224) (1311—38, 401, 448 ; —48, 159).

———, fauna (454) (1859—27 ; —28) (1950) (793—24, 58).

———, geological horizon (1237, 1278) (1311—33 ; —39) (1853) (1586, 40).

———, trans-Indus Salt Range (1975—28, 240).

Ceratitidae, of Muschelkalk, classification (486—25).

*Ceratolus*, systematic position of genus (1216).

———, teeth of —, from Maleri (1326—20).

Cerium mineral, S. India, analysis (1038—1, 189).

——— sulphate, on Trahanore graphite (1723—16)\*.

Ceylanite characters and composition (341) (448—3, 318) (812).

\*See Introductory Note—Supplementary List.

- Ceylon, ancient iron industry (732).
- , animal-shaped rocks in (1233—1).
- , apatite (317—2).
- , colouration (836).
- , baddeleyite (142—1).
- , cassiterite (357—2) (358—4).
- , chrysoberyl (88—5) (671) (1202, 240) (1071).
- , cinnamon stone, analysis (667—2).
- , corundum, occurrence *in situ* (356—8).
- , crystalline limestone, origin (262) (356—2 ; —5).
- , —, silicification (356—13).
- , crystalline rocks (356—9).
- , eup-marked rock in (1069—2).
- , desert tracts in (1905).
- , dolomite, analysis (1569).
- , fergusonite (143—1).
- , fluor spar (1368—5).
- , garnet-sand dunes (968a)\*.
- , geikielite (483).
- , gem gravels (438—3) (391) (1854—5) (358—5).
- , geological history, recent (1864).
- , geology (438—5) (1480—1) (1430, 693) (1759, Vol. I, 12) (356—1).
- of N.-W. Provinces (1233—2).
- of South Central portion (1366—1).
- of S.-W. portion (1293).
- , gold in (489) (492).

---

\*See Introductory Note—Supplementary List.

- Ceylon, gneiss, petrology (1021—1 ; —2).
- , graphite (1553) (358—2) (459—1, 63).
- , composition (930) (1908).
- , deposits compared with American (84).
- , distribution and origin (1910—1 ; —2).
- , industry (574) (1715—2).
- , specific heat (117).
- , veins in laterite (1881—2).
- , hot springs (438—9).
- , hyacinth, analysis (1834—1).
- , iron ore (1220) (514—23).
- , jargon (330—2).
- , laterite, nature and origin (970) (21).
- , littoral deposits (2) (1905—2, 266).\*
- , magnesian mica, analysis (1416).
- , mineral resources (575) (356—12).
- , mineralogical survey (356—7) (358—1) (514—18 ; —21) (1368—4) (416—2—8).
- , minerals, crystallographic characters (1202).
- , description (959) (729) (720) (1223) (356—11 ; —19) (514—12 ; —16) (1809).
- , monazite (356—18) (35—89).\*
- , nitre caves (438—8, 30, 377, 429 ; —10) (416—1).
- , orography (1069—1).
- , oscillations of level, E. Coast (1705—1).
- , physiography (199—2 ; —3) (1578—12, Vol. I, 202) (1556) (857—11, 189).
- , platinum (1368—1).

---

\* See Introductory Note—Supplementary List.

- Ceylon, pleistocene beds (1905—3, '101).\*
- ? horse (1905—2).\*
- , post-tertiary mollusca (1295—7).
- , quartz, modes of occurrence (1368—3).
- , quartz, implements (1605).
- , ring-shaped mountains (446).
- , rocks and minerals (487) (356—17).
- , petrology (1203).
- , salt manufacture (199—1).
- , sapphire (190).
- , scenery (356—6).
- , serendibite (1438).
- , siliceous limestone, petrology (986—2).
- , soils, composition (886).
- , spinel, analysis (1038—1, 183).
- , transparent blue (88—2).
- , stone age (1557—1 to 3) (1905—3).\*
- , stone implements (779—2 ;—3) (1414—2).
- , submerged plateau (1674).
- , sulphur and alum (1335).
- , topography (749, Vol. II, 485) (438—8) (1430) (1759) (319).
- , travels in (1829—1, Vol. I, 263) (1062—2) (803, Vol. II, 222) (855, 93).
- , thorium minerals (357—1) (358—3) (514—10) (1457) (515) (516) (371).
- , tourmaline, analysis (1834—2).
- , crystalline form (1968) (1336).
- , uraninite (356—10).

---

\* See Introductory Note—Supplementary List.

- Ceylon, useful ores and earths (1222).  
 ———, water-holes in gneiss (1705—2).  
 ———, zircon (330—1 ; —2) (317—3) (1681).  
 ———, zirkelite (142—2).  
*Chæromeryx*, note on genus (1109—11).  
*Chaibassia*, note on genus (1109—83).  
 Chakrata series, Jaunsar (1324—5, 193 ; —22, 156 ; —26, 131).  
 Chalk hills, Salem, petrology of ultrabasic rocks from (1219—18).  
 Chalybeate waters, Punjab (77a).  
 Chaman, Baluchistan, physical features of (1980—4).  
 'Chamans' (artesian springs), Quetta (1324—38, 44).  
 Chamba, geology (1142—3 ; —6 ; —12 ; —16) (1109—38).  
 Champaner series (148—22, 202 ; —37, 85) (96a—2, 101).  
 ———, Baroda (596—40, 30).  
 'Champion' gneiss, Mysore (1652—21, 147).  
 Chanda district, topography (332).  
 Chanderdip series, Jubhulpore (1326—71, 9).  
 Chandernagore, artesian boring at (1067—1, 157) (1324—40) (1854—2, 46).  
 Chandpur, Punjab, well section at (439—1).  
 Chandwar, Cuttack, kitchen-middling at (71—24 ; —43, 503).  
 Changchenmo valley, Kashmir, geology (1109—22, 34).  
 ———, physical features (294—1).  
 Changes, in river courses, *see* River changes.  
 Chappar shales, Baluchistan (1324—32, 93 ; —37, 19) = Belemnite beds.  
 Chari series, Cutch (1198, 250) (1324—41, 219).  
 ———, fauna, *see* Jurassic, Cutch.

---

\* *See* Introductory Note—Supplementary List.

Charnockite, analysis (1893a).\*

—————, hypersthenization of monoclinic pyroxenes in (1606a—1).\*

—————, petrology (859—10).

Charnockite series (859—31).

————— Central Provinces (741a—8).\*

—————, Ceylon (356—9).

—————, Kalahandi (1872—3, 7).

—————, Mysore (1549—7, 40 ; — 9, 93) (937—6, 82 ; — 7, 58) (1652—21, 149).

—————, Salem district (859—30, 116).

—————, Travancore (297—2, 10).

—————, stratigraphical relations of —, with Dharwars (1854—40).\*

'Charriages,' mechanism of (1854—48).\*

Chaung Magyi Series, Shan States (1034—33 ; — 45, 47) (1094a—2, 209).\*

Cheduba I., mud volcanoes (1159—13).

—————, eruptions of (1159—26 ; — 34 ; — 39 ; — 43, — 47).

—————, soil, composition (1405—7 ; — 8).

—————, topography (742).

Chel hill, Salt Range, faceted pebble from (1892—16).

Chelonia, eocene, from Salt Range (1109—74).

—————, pleistocene, Narbada (1712—18).

—————, Siwalik, Punjab (1215—1, 32).

—————, Siwalik and Narbada (1109—55 ; — 80).

Chendamangalam hills, S. India, description (972).

Cherra Punji, Assam, physical features and minerals (1902—1).

Cherra sandstone, cretaceous (1326—34) (1197—17, 169).

—————, fauna (1197—17, 181).

---

\* See Introductory Note—Supplementary List.

Chert beds, Kashmir (793—14, 29).

——— flakes, from Mirzapur district (987—50).

Cheyair (Cheyyeru) series, Cuddapah (987—7, 168).

Chhattisgarh basin, geology (987—32) (708—31, 39).

Chhindwara district, Deccan trap flows in (577a).\*

———, dyke of white trap in (612—2).

———, geology and petrology (577—6).

Chistolite schist, Tusham hill, Rajputana (1142—14, 106).

Chicholi range, Punjab, geology (1975—28, 254).

Chidamu beds, Spiti (486—5, 587).

———, fauna (1825—1).

Chidru beds, Salt Range (1859—26, 224, 241) (1311—33, 179).

——— hills, geology (1975—18, 425).

Chikalda, Gawilgarh range, topography (187—1).

Chikballapur, Mysore, water supply (1915—15).

Chikla stage ? U. Gondwana (987—14, 62 ; —23, 290) (888—22, 29).

Chikmagalur granite (1549—6, 65).

Chikkim series (1712—5, 116) (793—9, 86).

———, fauna (1685, 214).

Chilas, topography (123—2).

Chilpi ghat series (987—32, 187) (577—32, 282).

Chin series (1311—22, 62 ; —36, 8 ; —37, 5) (793—2, 74)=Axial series.

China, occurrence of Siwalik strata in (1109—42) (1006—1a).\*

——— (Southern), geology (1046).

——— (Western), *see* Yunnan.

Chinab R., description (235—13, Vol. III, 300) (316—4) (604).

---

\* *See* Introductory Note—Supplementary List.

- Chindwin valley, Burma, geology (1369—11, 141).  
 ———, topography (1478—3) (692—2) (1962—1).  
 Chiniot hills, Punjab, geology (830—2, 233).  
 Chintalpudi sandstone, Godavari (987—14, 59 ; —18, 208).  
 Chirakhan marl, Narbada (173—5, 39).  
 'Chirmiri volcanic series,' origin (577—53).\*  
 Chiru-like antelope, Hundes, skull of (1109—88).  
 Chitaldrug district, Mysore, geology (1915—9) (1549—1 ; —5 ; —10) (1548—4 ; —6).  
 ———, water supply (1606—1).  
 Chitaldrug series (1915—9, 24) (1549—1, 72).  
 Chitichun area, Cent. Himalaya, geology (708—24) (486—13).  
 ———, permian fauna (486—18, 3).  
 ———, permo-carboniferous fauna (486—9).  
 ———, triassic fauna (486—4, 101).  
 Chitor gneiss (730—5, 299).  
 Chitral, Devonian fauna (1144, 51) (1470—6, 86).  
 ———, geology (1142—39) (1144) (793—34, 278).  
 ———, physical features (281, 522) (904) (1986—5 ; —6).  
 ———, topography (1268, 131). (1243—9).  
 Chitral R., source (1063).  
 Chittagong, artesian wells (1034—39, 105) (983).  
 ———, geology (1369—18, 311).  
 ———, *see also* Bharatkund.  
 Chlorophæite ?, in Deccan trap (577a, 94).\*  
*Chondrodonta bösei* Vred., Seistan, (1854—40).  
 Chondrules, in meteorites, origin (1219—31, 98).

---

\* *See* Introductory Note—Supplementary List.



Chopé coal-field, geology (71—14).

Chor Mt., Simla, geology (1197—5, 40).

—————, petrology of dolerite from (1142—22).

————— granite from (1142—13, 61).

'Chos,' of Hoshiarpur, Punjab (60—2) (1235).

Chota Nagpur, ancient gold-crushing mills from (859—40) (1134—1, 67).

—————geology (71—20 ; —46).

—————, stone monuments in (147—10) (71—43, 162).

—————, topography (994—5) (1629—1) (410—1) (833).

—————, *see also* Singhbhum.

Chrysoberyl, Ceylon, crystallography (88—5) (1202, 240) (1071).

—————, twinning planes in (671).

Cinder mounds, Bellary (1294—7 ; —28) (336—3) (596—32, 261, 272) (1612).

Cinnamon stone, Ceylon, analysis (667—2).

Capolin, Ceylon, petrology (1021—1, 375).

—————, Ruby mines, Burma (208, 206).

Classification, of sedimentary strata (148—76).

—————, petrographical (577—41).

'Clayey slates,' Spiti (1712—5, 83) = Spiti shales.

Clays, of economic importance, Fed. Malay States (957—3).

—————, Kinta district, Perak, origin (1603—40).\*

—————, Mysore, analyses (1838—5, 188).\*

—————, marine, Bombay (288—8, 204 ; —13, 326).

—————, Ceylon (356—16).

Cleavage, absence of true —, in Kurnool 'slates' (1326—29).

—————, in Cuddapah slates (987—7, 136).

---

\* See Introductory Note—Supplementary List.

Cleavage, in Naini Tal slates (1219—42, 240).

————, in Palnad limestone (987—7, 110).

Clifton, Karachi, growth of sand dunes at (1324—63).

Closepel granite (937—6) (1652—21, 149).

*Clypeaster complanatus* Dunc. and Sla., compared with *C. duncatus* Noth. (423—3)

Coal balls, *see* Ball coal.

Coal Measures, Assam (1159—9, 280) (1184—2, 188) (793—18, 288) (1369—18, 278).

————, dicotyledonous leaves from (1610—6).

————, Malay Peninsula (1085—4;—5) (1097—6) (1346—2) (1603—3;—24;—33, 351).

Coal outcrops, lavas formed by burning of (577—53;—56).

Coal seam, boulder embedded in (859—63).

————, calcareous concretions in (1787—8).

————, long wall method of working, Bengal (876).

————, panel system of working, in India (646—2).

————, pillar working of —, in Bengal (1116—1).

Coal seams, thick, method of working in India (10—1) (718—4) (768—2) (991—2) (1639) (1640—1) (1886) (1839—2)\* (210—23)\*.

————, *see also* Collieries.

Coastal plains, artesian conditions in (1197—81, 210).

Coast line, Ceylon, extension of (1674, 73).

————, India, ancient map of (1680).

————, Malabar, extension of (1432).

Cobaltite, Khetri, Rajputana, analysis (1159—24).

Cochin, laterite (228—20).

————, limestone (397—5).

————, mud banks (441).

\* *See* Introductory Note—Supplementary List.

Cochin, well section at (228—12).

Coco Is., description (853).

Coconada, artesian well at (1854—2, 55).

Coimbatore district, crystalline limestone in (364—1).

—————, elaeolite-corundum-syenites in (859—34).

—————, topography (1302).

Collieries, Indian, central power stations for (1177).

—————, deep shafts in (646—3; —4\*) (656).

—————, descriptions (1072) (255—1).

—————, electrical power in (1230—2).

—————, explosives in (501—7).

—————, goaf blasts in (10—2) (1402—2).

—————, ignition of coal dust (1408).

—————, shaft-bottom arrangements (210) (656) (898) (1116—3).

—————, underground fires (1403) (1116—2).

————— methods of working (1146).

—————, waste in (1919).

—————, *see also* Coal seams.

Colombo, periodic earth-movements (73).

*Colossochelys atlas*, Falc. and Caut., description (562—8) (561—12).

Colour changes, in chlorophæite (577a, 94).\*

—————, in sodalite (1854—3; —4, 44) (859—59) (403).

Columbite, Hazaribagh (1324—54, 129).

—————, Pichhli, Gaya district (1787—13, 260).\*

Compass, remarkable variation of —, near Saugor, Bundelkhand (1405—35).

Concrete, sub-recent, in Cutch (143—1).

---

\* *See* Introductory Note—Supplementary List.

Concrete, *see also* Littoral concrete.

Concretions, calcareous, in Jharia coal (1787—8).

—————, submarine, Andaman Is. (1787—9, 209).

—————, supposed organic, Narbada valley (1684—12).

—————, tubular, in sand-rock (1369—1, 247 ; —11, 34).

Cone-in-cone structure, Burma (1369—11, 21).

Conglomerates, Chamba, correlated with Blaini beds (1142—3, 306).

—————, Chitral, age and correlation (1142—39, 5 ; —40) (1144, 4) (793—34, 284).

—————, Dharwar (596—22, 195) (1134—4, 108).

—————, autoclastic origin (1649—6, 2 ; —10, 26) (1652—18, 15 ; —19, 38) (1549—11, 54) (937—3, 93)\* (1606—5, 150)\*.

—————, diamond-bearing, Bundelkhand (1854—18, 273).

—————, Kurnool (1776—2) (1853—3, 124).

—————, gold-bearing, E. Bokhara (1010—1).

—————, Siwalik, conditions of deposition (1406—24)\*.

—————, distorted pebbles in (1219—7).

Congress, International Geological, Bologna 1882 (148—70), Berlin 1885 (148—77), London, 1888 (148—82), Paris 1900 (148—92), Stockholm 1910 (577—40).

Conifers, Indian fossil, cuticles of (855a—1)\*.

Conjeveram gravels (596—8, 41).

Contact metamorphism, in Axial series (1763—12, 35).

—————, in 'Central gneiss' (1142—15, 172 ; —32 : —381).

—————, in Charnockite series (859—30, 121 ; —31, 230).

—————, in Dalhousie rocks (1142—8, 133).

—————, in Gondwanas (864, 132).

—————, in granite, Nilgiri hills (348—1 ; —2, 232).

---

\* See Introductory Note—Supplementary List.

Continent, Asian, genesis of (457—1).

———, in upper carboniferous period (593, 401).

———, Indo-Oceanic, former existence (147—18), (148—83 ; —89) (634—6 ; —8).

*Conularia*, discovery in Salt Range boulder-bed (1197—75, 1) (1892—24).

*Conularia* beds, Salt Range, age and fauna (1859—19 ; —25) (1975—33).

———, geological horizon (1975—34 ; —35) (1324—17) (1197—6 ; —32) (1219—14, 20).

Cookeite, Kashmir (1034—14, 65).

Coorg, effects of forest destruction in (1173—1) (124).

———, geology (1294—48, 317).

———, neolithic celt from (147—17).

———, pre-historic remains in (1326—59).

———, soil, analysis (1188).

———, topography (1479) (1477).

Copper, Mysore (1838—5, 178).\*

———, native, Fed. Malay States (1603—18).

———, Yunnan (685).

Copper age, in India (1667—3) (1558) (1287—2).\*

——— blooms, from Pachumba (1551) (1326—70).

——— ore, variety of —, Mysore (1776—1).

Coral reef, Devonian, Padaukpin, Upper Burma (1034—45, 196).

——— reefs, recent, Cape Comorin (596—25, 33).

———, Ceylon (634—1).

———, Gulf of Manaar (1881—1, 324 ; —3, 18) (596—37).

———, Indian Ocean (634—3, Vol. I, 13 ; —7) (179, 443).

———, Maldiva Is. (14—3 ; —4) (634—5).

———, Mergui Archipelago (214, 467).

---

\* See Introductory Note—Supplementary List.

Coral reefs, recent, Nicobar Is. (1487—1, 210 ; —2, 82) (846—1, 98).

———, *see also* Atoll.

Coralliferous series, Sind (512—6).

Coralline limestone, Narbada (288—13, 237) (173—5, 42).

Corals, jurassic, Cutch (704—2).

———, tertiary, Sind, (512—1 ; —5).

Cordierite, Travancore, optically positive (297—3).\*

———, Vizagapatam Hill Tracts (1873, 13).

Coromandel Coast, extension of (523—2).

———, geology (1294—46) (596—17).

———, supposed volcanic island off (1405—26).

Coronadite, composition (577—25).

Corundum, Ceylon, crystallography (247) (356—17, 55).

———, *in situ* (356—3).

———, Fed. Malay States (555—12).

———, Mysore (1723a).\*

———, Tibet, analysis (703).

———, alterations and associated minerals (643).

———, character and composition (996—1) (308).

———, crystalline form (448—1 ; —3) (706—1) (859—25, 5) (672).

———, origin (208, 214).

———, structural planes (960—2).

Corundum-rock, India, microscopic characters (960—3, 57).

Corundum-sillimanite rock, Ceylon (356—11, 60).

Corundum syenite, Sivamalai series (859—34, 201).

Crab, fossil, from Makran, (1964—3).

---

\* *See* Introductory Note—Supplementary List.

Crabs, fossil, Arakan, occurrence (1397—2, 560).

——, tertiary, Sind and Cutch, described (1712—22).

Crania, of tertiary and post-tertiary ruminants, (1109—12).

Craterlets ?, in Cutch (691—3, 316).

——, in Deccan trap, Chhindwara (793—26, 90) (577a 120).\*

Craters, explosion, in Lr. Chindwin district, Burma (1324—68).

Creep, of soil-cap (1324—21, 149).

Cretaceous, Afghanistan (148—65) (708—4, 39 ; —10 ; —12, 63 ; —15, 19 ; —16, 99) (793—22, 34).

——, Afghan-Turkistan (708—13, 251).

——, (?), Andaman Is. (1787—9, 205).

——, Arakan Yoma (1763—16, 311) (1787—3).

——, Baluchistan (354—4, 188) (708—4, 34 ; —26, 120) (148—73, 140) (1324—32, 93 ; —37, 18) (1854—36, 191, 196) (423—5).

——, fauna (1311—19 ; —20).

——, occurrence of *Physa prinsepilii* in (1854—23).

——, Baroda (596—40, 42).

——, Bokhara, fossils (163).

——, Cutch, cephalopoda (1859—4, 245).

——, Garo Hills, Assam (1197—12, 13) (669—17, 42) (1034—8, 41).

——, Hazara (1860, 341) (1975—24, 125) (1219—17, 35).

——, Himalaya (1712—5, 113) (708—20, 79 ; —24, 21) (793—9, 86).

——, fauna (1712—5, 114) (1685).

——, Jaintia Hills, Assam (1034—3, 199) (708—34, 27).

——, Karakoram (1366a)\* (1690a—2).\*

—— (?), Kathiawar (569—6, 84).

——, Khasi Hills, Assam (1326—34) (1197—9, 420 ; —17, 168) (669—13, 2 (1034—4) (708—33, 22).

---

\* See Introductory Note—Supplementary List.

- Cretaceous, Khasi Hills, Assam, fossils (1117—3 ; —4 ; —8, 566 ; —19, 183) (1197—17, 181).
- , Khorasan (708—12, 63).
- (?), Madras (596—8, 61).
- , Mikir Hills, Assam (1657—2, 78).
- , Mustagh range, Kashmir, brachiopoda (431—3, 38).
- , Narbada valley (966—2) (1326—18, 116) (148—22, 207 ; —37, 88) 119—37, 57) (173—5, 23).
- , ammonites (1854—24 ; —28).
- , echinodermata (512—2 ; —8 ; —9) (611a).\*
- , Pamir (793—34, 309).
- , Panch Mahals, Bombay (96a—2, 120).\*
- , Persia, fossils (1406—1).
- , Persian Gulf (1406—10, 13).
- , Pondicherry (964—1 ; —2) (147—8, 151) (1067—1, 145) (1892—2) (1008—8).
- , discovery of fossils in (964—3 to 5) (1348—1) (1117—28).
- , fauna (496) (1008—3, 54) (1892—21, 20) (1067—4).
- , fishes (533—1).
- , *See also* Cretaceous, S. India.
- , Rajpipla (173—28, 170).
- , Salt Range, (1975—18, 103 ; —21, 361).
- , fossils (1604).
- , relations between — and Jurassic (1006—3).
- , Seistan (1854—37 ; —40).
- , Sind (148—56, 163 ; —63, 33).
- , corals (512—5, 17).
- , echinoidea (512—1, 7).

---

\* *See* Introductory Note—Supplementary List.



Cretaceous, Southern India (1294—38, 213, 315) (238—13, 244) (147—8) (596—23, 283).

\_\_\_\_\_, correlation (598—1) (1712—6) (1008—2).

\_\_\_\_\_, fauna (598—2) (1008—1).

\_\_\_\_\_, brachiopoda, etc. (1712—24).

\_\_\_\_\_, cephalopoda (147—6) (1712—2 ; —4 ; —6 ; —12 (1882).

\_\_\_\_\_, gastropoda (1712—11 ; —13).

\_\_\_\_\_, pelecypoda (1712—21 ; —23).

\_\_\_\_\_, *Goniomya* from (423—2).

\_\_\_\_\_, Suleiman range (708—8, 182) (1034—20, 83).

\_\_\_\_\_, Tanjore, discovery (1854—39).

\_\_\_\_\_, Tibet (570—17) (793—11, 164 ; —12, 161).

\_\_\_\_\_, fauna (499—3).\*

\_\_\_\_\_, Tirah, N.-W. Frontier (793—4, 101).

\_\_\_\_\_, trans-Indus Salt Range (1975—28, 241).

\_\_\_\_\_, Trichinopoly, fossils (1326—15) (596—19).

\_\_\_\_\_, tree fern stem from (570—19, 133).

\_\_\_\_\_, Yarkand (1712—26, 50).

\_\_\_\_\_, Yasin (793—34, 295).

Cretaceous fishes, distribution in India (1109—39, 63 ; —75, 70).

\_\_\_\_\_, land surface, Dhar forest (859—38, 21).

\_\_\_\_\_, *Orbitoidea*, of India (1854—26).

\_\_\_\_\_, reptilia, distribution in India (1109—39, 65 ; —75, 66).

Cretaceous-eocene succession, Baluchistan (1311—41).

\_\_\_\_\_, India (499—4).\*

Crocodile, fossil, Siwalik hills (292—6) (561—16, Vol. I, 344).

- Crocodylia, Siwalik (1109—64).
- Crocodylian remains, from Kota (1353—3).
- , from Sehwan, Sind (1981).
- Cromlech, Coorg, prehistoric remains in (1326—59).
- , Devi Dhura, Almora (825—2).
- Cromlechs, in Deccan (1751—3).
- Crustacean tracks, in Pab sandstones (1854—20, 247).
- , supposed, in Haimantas (1854—20, 250).
- 'Crystalline boulder series' Salt Range (1892—14, 119).
- Crystalline limestone, Burma (1326—17, 326) (191) (88—4, 205).
- origin (208, 172, 205) (1742, 318) (154—2, 168)  
(1034—45, 37).
- , Central Provinces, age and origin (577—6, 195; —32, 297  
(1219—31, 100).
- , Ceylon (356—1, 599; —2; —9, 108).
- , origin (262) (356—5).
- , petrology (487, 271).
- , silicification (356—13).
- , Chitaldrug (1548—4, 90).
- , Coimbatore (364—1).
- , Ganjam, petrology (1657—3, 154).
- , Gilgit, age and petrology (1142—86, 351, 361).
- , Jodhpur (1034—28, 17).
- , Kadur district, Mysore (937—8, 95).\*
- , Karakoram range (351—5, 57).
- , Mirzapur district, analysis (1159—5, 42).
- , Padar, Kashmir (1034—14, 62).

---

\* See Introductory Note—Supplementary List.

Crystalline limestone, Safed Koh, Afghanistan (8—21, 70).

—————, Siah Koh, Afghanistan (793—22, 12).

—————, Trichinopoly district (987—1) (988, 272).

—————, Vizagapatam district (987—33, 153).

Crystalline rocks, Assam (1159—9, 282) (1134—2, 181).

—————, Bundelkhand (1197—2, 49).

—————, Central Himalaya (708—20, 40).

—————, Central Tibet (793—11, 161 ; —12, 138).

—————, Ceylon (438—5, 314) (356—1, 592 ; —17).

—————, Chhatisgarh basin (987—32, 171).

—————, Coorg (1294—43).

—————, Ganjam (1657—3, 154).

—————, Hazara (1975—24, 116) (1219—17, 46).

—————, Hazaribagh (1159—7).

—————, Himalaya (827—10, xli) (828) (1717—8, 299) (1197—27, 17)  
(1142—17) (1219—4 ; —5 ; —6 ; —11).

—————, Hyderabad, Deccan (1853—6 ; —7).

—————, Indian Peninsula (1666—2) (1294—33, 145).

—————, Jeypore, Vizagapatam (1872—2, 167).

—————, Kalahandi (1872—3, 3).

—————, Karakash valley (1712—27).

—————, Karakoram range (170).

—————, Ladakh (1109—22, 28) (1324—27, 153).

—————, Malwa (415, 338).

—————, Martaban, Burma (1763—16, 328).

—————, Mikir hills, Assam (1657—2, 76).

—————, Nagpur (843, 351).

Crystalline rocks, Spiti (1142—2, 60).

———, Thian Shan (666a, 274).\*

———, Travancore (1183, 2).

———, Trichinopoly (147—8, 29).

———, Vizagapatam (987—33, 149).

———, Wynaad (793—5, 56).

———, *see also* Metamorphic rocks.

Crystalline series, Yünnan (211—10, 182 ; —19,\* 216).

Crystalline zone, Hazara (1219—17, 227).

Cuddalore series (147—8, 165).

———, age and fauna (1854—33).

———, Carnatic (988, 256) (596—5, 13 ; —2, 59) (987—17, 175

———, Godavari district (987—12 158 ; —18, 248)

———, Guntur district (596—17, 84).

———, Palk Strait (1067—5).

———, Pondicherry (1067—1, 148).

———, Tanjore (596—18, 149).

———, Tinnevely (596—24, 35).

———, Travancore (987—25, 93) (596—25, 28).

'Cuddapah beds,' *see* 'Diamond sandstones.'

Cuddapah district, geology (1294—49, 389) (707—1).

———, hill ranges (707—2).

———, occurrence of Dharwar schists in (1549—4).

Cuddapah system (987—6 ; —7, 124).

———, Chota Nagpur (1134—1, 73).

———, East Coastal area (596—17, 45).

---

\* *See* Introductory Note—Supplementary List.

Cuddapah system, Jeypore, Vizagapatam (1872—2, 171).

———, Kalahandi (1872—3, 11).

———, Madras (596—8, 125).

———, Nellore (987—17, 144).

———, North Arcot (596—20, 196).

———, Pranhita-Godavari valley (987—23, 209).

———, outliers in Kistna valley (596—28, 20).

———, petrology of basic eruptive rocks in (1025—4).

Culm, Spiti (793—9, 47).

Cumbum slates, Nallamalai series (987—7, 227).

Cumingtonite, Mysore (1652—13, 87).

Cup-marked rocks, Bamian, Afghanistan (793—20, 344).

———, Ceylon (1069—2).

———, Nagpur (1490—1).

Curvature, of Indian arc (1426—2).

Cutch, distribution of ammonite fauna (1859—1).

———, fossils from —, notes on (235—14) (1736—2).

———, geology (813) (691—3) (148—15) (1975—8; —11).

———, relations of, with Sind and Kathiawar (148—74)

———, Gulf of, physical features (629—8).

———, jurassic brachiopoda (992—1).

——— cephalopoda (1859—4).

——— corals (704—2).

——— echinoidea (704—1).

——— flora (691—3, 327) (570—4; —7; —8, 29; —30).

——— Trigonixæ (992—2).

———, laeocollites (143—2).

- Cutch, plant beds, age of (1326—35, 6) (570—30).  
 ———, Runn of —, *see* Runn of Cutch.  
 ———, superficial deposits (143—1).  
 ———, tertiary echinoidea (513—2) (1854—20, 197).  
 ———, topography (1145—1) (1420—1) (1768) (924—5) (1645).  
 Cuticles, of Indian fossil conifers (855a—1).  
 Cuttack, elevation of coast (150, 89).  
 ———, section of hill at Naoraj (994—2).  
 Cycadaceæ, occurrence in Damudas (570—19, 70 ; —24 ; —34)  
*Cyclolobus haydeni* Diener, note on (486—19).  
 Cypridæ, fossil, Nagpur (955—1).  
 Cyrtolite, Nellore, analysis (1787—11, 212).  
*Cyrtoma*, description of genus (1117—19).  
 Cystidea, Yünnan, morphology (85a)\* (1470—12).\*

## D

- Dadupur collection of Siwalik fossils (65—3) (66—1).  
 Dag beds, Punjab (1859—23, 13) (708—21, 106).  
 Dagshai stage (1197—5, 12, 17) (793—24, 83).  
 Dalchipur sandstone, Bundelkhand (1197—2, 6, 9).  
 Dalhousie, altered basalts, petrology (1142—10).  
 ———, geology (1142—4 ; —16, 101).  
 ———, gneissose granite, petrology (1142—8 ; —13, 64).  
 Daling series (1159—6, 39) (173—16, 222) (793—26, 91).  
 ———, Aka hills, Assam (1034—6, 123).  
 ———, Bhutan (1406—6, 29).

---

\* *See* Introductory Note—Supplementary List.

Dalma trap, Chota Nagpur (71—46, 78).

—————, petrology (1134—1, 74) (859—71, 18).

Daltonganj coal-field, fossil plants (570—52).

—————, geology (888—9).

—————, rock specimens (866—3).

Damascening, of iron and steel (1246, Vol. II, 195) (3—6) (98a)\*

Dambal-Chiknayakkanhalli band, Dharwars (596—34, 49) = Gadag band.

Damdama stage, Rajputana (730—2, 86) (830—5, 191).\*

Damodim volcano, S.-E. Persia (1854—1, 281).

Damuda flora, *see* Glossopteris flora.

Damuda (Damodar) R., changes in course of (576—2, 340).

—————, floods, 1859 (1668).

Damuda sandstone, Rajmahal, composition (1723—1, 196).

Damuda series, age and correlation (1326—7, 619; —12, 253; —28; —32, 205) (842—4) (150, 82) (570—8, 67; —25).

—————, Bisrampur coal-field (71—15, 30).

—————, Bokaro coal-field (888—2, 47).

—————, Chopé coal-field (71—14, 350).

—————, Daltonganj coal-field (888—9, 332) (1034—18).

—————, flora (570—52).

—————, Darjiling (867—6, Vol. I, 402) (1159—6, 14) (1197—32) (173—12, 241; —15).

—————, Deoghar coal-fields (888—4, 251).

—————, Eastern Himalaya (669—19, 37) (1034—6, 122) (1134—2, 187) (1406—6, 24) (240, 216) (211—5, 238).

—————, Godavari valley (148—28) (987—12, 159).

—————, Jharía coal-field (888—1, 244) (1887—1).

—————, Karanpura coal-fields (888—7, 296, 323).

---

\* *See* Introductory Note—Supplementary List.

Damuda Series, Karayypura coal-field flora (570—47, 246).

—————, Karharbari coal-field (888—3, 221) (1545—1).

—————, flora (570—42).

—————, Korba, Bilaspur (148—24).

—————, Lakanpur coal-field (71—53, 109).

—————, Mahanadi basin (71—28, 171).

—————, Mand R. coal-field (71—53, 113).

—————, Narbada valley (1199—3, 153).

—————, Orissa (148—35, 58).

—————, Palamau (71—32, 40).

—————, flora (570—41, 65 ; —47, 252 ; —52).

—————, Pench R., (148—13 ; —71) (1676) (952—3, 20).

—————, Raigarh-Hingir coal-field (71—13, 103 ; —21, 105).

—————, Rajmahal hills (1326—6, 267 ; —7, 618) (71—26, 179).

—————, Ramgarh coal-field (71—2, 116).

—————, Rampur coal-field (71—53, 111).

—————, Raniganj coal-field (148—7, 39) (1869, 229).

—————, flora (570—9).

—————, Sarguja (708—1, 144).

—————, flora (570—41, 65).

—————, Singareni coal-field (987—9, 67).

—————, South Rewah (888—24, 126, 313).

—————, flora (570—42, 182).

—————, Talchir (150, 56).

—————, Tawa valley, Betul (148—18).

—————, Wardha valley, Chanda (148—19) (888—20, 18).

—————, western extension (148—5) (1326—23, 310 ; —55, 100 ; —60, 4).



Damuda valley, geology (1935—1).

Damuda-Panchet flora, (570—39).

Danaite, Khetri, Rajputana (1159—24).

Dandli coal-field, Jammu, note on geology (1972—2).

Dangot sandstones, Punjab (1975—17, 120) (1859—23, 17).

Daonella beds, Spiti (708—20, 66) (486—5, 587; —39, 13, 73) (793—6, 193) (1010, —2, 214).

Daphla hills, Assam, geology (669—19).

Darjiling, cause of landslips at (859—29).

Darjiling district, geology (1664) (1073—3) (1159—6).

—————, Siwaliks in (1598—1).

—————, topography (827—7).

—————, travertine, composition (1405—12).

Darjiling gneiss, metalliferous character (910—2).

—————, petrology (1366—2).

'Dasht,' Baluchistan, defined (1854—1, 189).

Daulatabad, geology and physical features (187—2).

Deccan, fossil fish from (533—2; —3) (1737).

————, geology and physical features (1736—1; —3) (1158—8; —9) (148—58).

————, laterite (148—37, 97).

————, minerals (130—2).

————, stone monuments in (1751—3).

————, topography (130—1).

Deccan trap (238—13, 255) (1736—1, 414) (1294—33, Vol. IX, 20) (148—16; —21; —37, 89).

————, Aurangabad (187—2; —3).

————, Baroda (596—40, 51).

————, Bhore Ghat, section (238—23, 181).

Deccan trap, Bombay (288—8, 163, 192) (228—11, 171, 205) (1975—1, 183) (148—38) (1053—2, 19).

—————, petrology (1142—7 ; —21, 107).

—————, Bombay Islands (1775—2, 293) (288—23, 167).

—————, Bundelkhand (1197—2, 76).

—————, Central Provinces (1326—69, 77).

—————, Chhatisgarh basin (987—32, 199).

—————, Chhindwara (577—6, 163) (793—26, 88) (577a).\*

—————, Cutch (148—15, 30) (1975—8, 55 ; —11, 58).

—————, Godavari district (987—18, 231).

—————, Gujarat (1763—27, 6).

—————, Kathiawar (569—6, 90) (11, 20).

—————, Konkan (1930) (596—14, 32 ; —15, 44) (320—3).

—————, Malwa (415, 320) (619—6, 153) (1197—37, 56).

—————, Mandla, sub-division (741a—1).\*

—————, Nagpur (1853—2) (843, 351, 356).

—————, Narbada valley (1199—3, 218) (148—22, 219) (173—5, 51).

—————, Pavagad hill, Panch Mahals (577—12) (96a—2, 75).\*

—————, Pranhita-Godavari valley (987—23, 296).

—————, Rajpipla (173—23, 172).

—————, Sahyadri range (750).

—————, Satpura range (1197—26, 178).

—————, Saugor district (375).

—————, Sichel hills, Hyderabad (1158—8, 553).

—————, Sind (148—56, 165 ; —63, 36).

—————, South Mahratta country (596—12, 171).

—————, Surat (1975—5, 28).

---

\* See Introductory Note—Supplementary List.

Deccan trap, age of (843, 367) (844, 163) (1199—3, 206) (1854—23).

———, artesian wells in (1854—2, 84).

———, columnar jointing (57) (148—16, 292).

———, eastern extension of (1294—24, 957) (148—16, 139).

———, faults in (1219—31, 128).

———, native iron in (951).

———, palagonite in (1219—9).

———, permeability (148—38).

———, petrological resemblance to Rajmahal trap (1142—21, 110).

———, possible representatives at Aden (1854—38, 323).

———, products of weathering (1892—28).

———, scenery of (642).

———, silicified (741a—2).\*

———, southern boundary (1294—23, 937; —24, 956).

———, sub-aerial character (842—2, 148) (844, 155) (148—16, 9).

Deep sea deposits, Kilacheri boring, Madras (1280).

———, Indian Ocean (1275—1; —2).

Defiles, of Irrawaddy (1987—3, 68) (29—1, 290) (1648—2, 258) (255—2, 242) (1134—7, 510).

Deflation, in Central Asia (1319—2).

———, in Rajputana desert (1324—28) (1034—28, 10).

Dehing R., *see* Dihing.

Dehra Dun, drainage of (603).

———, force of gravity at (1532).

Dehydration of laterite (859—41, 65).

Delhi, iron pillar, history (1667—1) (1850).

Delhi quartzite, petrology (1142—14, 103).

---

\* *See* Introductory Note—Supplementary List.

- Delhi series (730—5, 292) (830—5, 187 ; —6, 23).\*
- , correlated with Gwalior (1324—41, 71).
- Delta, Cauvery, (988, 247).
- , changes in (188—2, 181).
- , Gangetic (1473—2, 91 ; —3, 258) (867—6, Vol. II, 339) (840).
- , changes in (576—2) (1326—63) (43).
- , conditions of deposition (1823, 494).
- , rate of growth (1117—21).
- , head of Persian Gulf (98—1 ; —2) (289—1 ; —2).
- , Hooghly (900—6).
- , drift wood in (1381—2).
- , structure (1686—3).
- , Indus (1473—3, 285) (235—9, 114 ; —13, Vol. III, 228) (284—1) (1801—2).
- , changes in (235—12).
- , Irrawaddy (222—14, 269) (1987—3, 80) (1710) (1763—9, 21) (677—6).
- , floods in (1551a).\*
- , growth of (1087—1).
- , Mahanadi (374).
- , Tarim R. (806—8, Vol. I, 419).
- Deltas, Indian, artesian conditions in (1197—61, 220).
- Dendrophylia*, U. miocene, Burma (1370).
- Denodar hill, Cutch, volcanic character (691—3, 315) (1975—11, 207).
- Densities, of rocks, Kolar gold-field (1652—14).
- Density, underground chain of high —, in India (239—3).
- Denudation, at high elevations in Himalaya (1034—43, 195).
- , effects of —, in India and Ireland, compared (1975—3 ; —4).

---

\* See Introductory Note—Supplementary List.

- Denudation, effects of ———, on elevation of Himalaya (588—2).
- , of Deccan trap, Bombay (1975—1, 201).
- , sub-Himalayan, Punjab (60—2) (1235).
- , subterranean, Cherra Punji (1326—8, 138) (1197—9, 424).
- , Kumaon (708—20, 36).
- , Shan plateau (1034—45, 325).
- Denwa stage, Satpura (1197—26, 153).
- , reptilia and amphibia (1109—16, 30 ; —57).
- Deoban limestone (1324—5, 195 ; —26, 133).
- Deodhanga Mt., identification (849—8) (1904—4).
- Deoghar coal-fields, geology (888—4).
- Deola marl, Narbada (173—5, 39).
- Deosai gneiss (1109—26, 17).
- Deosai plateau, Kashmir, origin (502—1, 464).
- , physical features (502—3, 376) (1321—1, 81).
- Deosir hill, Rajputana, petrology of granite (1142—14, 114).
- Depressions, of land surface in India (228—6).
- , principal, on surface of globe (228—15).
- , *see also* Level, oscillations of.
- Derajat, topography (1463—1, 179).
- Derbya, mode of attachment (499—2).
- Desert, Rajputana, physical features (235—10) (148—48) (99—2) (1034—28, 9).
- , Sind, physical features (924—3 ; —4) (623—2 ; —3).
- , sand dunes in (1324—41, 455).
- Desert tracts, N.-W. Ceylon (1905).
- Deserts, Central Asia (1385) (478) (897—5 ; —7) (806—8 ; —12).
- , Persia (148—39 ; —41) (806—13, Vol. I, 186).

- Deserts, origin of salt deposits in (860) (859—76).
- Desiccation, of Baluchistan (1854—1, 210).
- , of Central Asia (897—5 ; —7).
- , of Eur-Asia (1015—3 ; —4).
- Desmin, Bhusawal, analysis (1675—2, 347).
- Devi Dhura, Almora, prehistoric remains (825—2).
- Devonian, Afghanistan (793—22, 24).
- , fauna (1470—6, 103).
- , Central Asia (1725, 439).
- , Chitral (1142—39) (793—34, 283).
- , fauna (1144, 51) (1470—6).
- , Pamir (793—34, 315).
- , Persia, fauna (1413) (1470—6, 100).
- , Shan States, Burma (1034—45, 182).
- , fauna (1470—2).
- , Spiti and Bashahr (793—9, 33).
- , fauna (1470—6, 106).
- , (?) Tibet (477).
- , Yunnan (376) (1031, 331).
- , fauna (1167—1 ; —2, 452).
- Devonian fauna, distribution (1470—5, 27).
- Dhalbhum, stone implements from (71—22).
- ‘Dhamans’ (alluvial fans), Baluchistan (1324—38, 40) (1854—1, 188).
- ‘Dhands’ (salt lakes), of Sind (623—3, 189) (148—48, 93 ; —50, 10).
- Dhansiri valley, Assam, river changes in (1324—3, 238).
- Dhar, iron pillar, history (1667—2).
- Dhar Forest, geology (859—38, 19).

Dhar Yaro, Khirthar range, Sind, description (1026—4).

Dharmasala, Kangra, geological section (1197—5, 62).

Dharwar district, geology (313—1) (596—12).

Dharwar system (596—31, 98; —34).

—————, Ariantapur (1915—5, 67).

—————, Bellary (596—31, 101; —39, 74) (652—3).

—————, sedimentary origin (652—4).\*

—————, Chitaldrug (1548—2; —4, 87) (1652—18, 36)

—————, petrology (1915—9).

—————, Chota Nagpur (71—46, 73, 124) (1134—1, 70).

—————, Cuddapah (1549—4).

—————, Dambal gold-field (16—1, 447).

—————, Dharwar-Shimoga band (596—34, 43).

—————, Gadag band (1134—4, 99).

—————, Hassan district (937—1, 133).

—————, Kolar (175—1) (1067—2) (1654—7).

—————, Mysore (596—22; —33) (50) (1915—1).

—————, Shimoga district (1548—1) (1649—1, 122; —3, 120).

—————, age and composition (1652—21, 143; —23, 7\*; —24\*) (577—31)  
clxxii).\*

—————, distribution (1134—6) (577—32, 280).

—————, stratigraphical relations (1219—32).\*

—————, volcanic rocks in (708—30, 61).

Dhauladhar range, geological section (1197—5, 62).

—————, glaciation (1197—5, 155) (1142—4, 49).

—————, topography (1231—1).

Dhawalgiri, Mt., height of (337—6).

\* See Introductory Note—Supplementary List.

Dhosa oolite, Cutch (1859—4, Introd.).

Diabase, petrology of —, Gadag band of Dharwars (1134—4, 115).

—————, Jeypore, Vizagapatam (1872—2, 173).

—————, Kolar (859—35, 80).

—————, Salem (859—30, 129).

—————, Son valley (1325, 82).

—————, Yünnan (1004, 370, 376).

Diamond, structure and origin (194—2).

'Diamond series,' S. India (1294—38, 156) (288—13, 238).

—————, *see* Cuddapah and Kurnool series.

Diamonds, descriptive catalogue, Hume collection (448—4).

—————, in Malay Peninsula (1482—2).

Dibong R., Assam, course of (1218) (1282—2).

—————, source (1871—17, 580).

*Dictyozamites*, systematic position (570—12 ; —13, 532).

Dicynodonts, Panchet series, described (1109—16 ; —84).

—————, occurrence (1326—32, 198).

Diego Garcia, atoll, description (179).

Dihing (Dehing) basin, Assam, exploration (1926—2, 412) (1060) (1375—(669—27).  
(1124) (497—2, 307).

—————, geology (1034—7).

Dihing series (1159—9, 298) (1369—13, 284).

Dihong R., Assam, discharge (1428).

—————, supposed subterranean passage in (108—2).

—————, upper course of (1289) (1218).

Dihong valley, exploration (35-10) (108—1) (581) (61—5).

—————, *see also* Brahmaputra and Tsang-po.

Dinajpur district, topography (1181, Vol. II, 582) (1623—2).



Dinosaurian remains, in India (902—4).

—————, in Lameta series (1190a—1; —2).\*

—————, vertebrae, cretaceous (1109—76).

*Dinothereum*, Perim I., Cambay (507—2).

Diorite, petrology of —, Hundes (1142—18, 118).

—————, Karharbari (864, 123).

—————, Kashmir (1142—31).

—————, Rajmahal hills (1142—21, 106).

—————, Shan States (1034—45, 60).

—————, Yünnan (1004, 367).

Diorite dykes, in gneiss, Nellore (987—17, 165).

Diorite-porphyrity, Kadur district, petrology (1649—9, 41) (937—8, 97).\*

—————, Ladakh, petrology (1142—37, 321).

Dipsang plateau, Kashmir, description (451—5, 92).

Dirt bands, in Poting glacier (713—1, 107).

Disang R., Assam, floods, 1869 (1375—2).

Disang series (1159—9, 286) (1134—2, 188) (793—18, 285) (1369—13, 276).

—————, Naga hills (1369—12, 257, 261).

Discharge, of rivers, *see* River discharges and Flood-discharges.

*Disapsalis*, description of teeth (1406—18).

Doab series, Afghanistan (793—22, 28).

Dolerite, Aden, occurrence (1077, 315).

—————, petrology (1520, 37) (1854—38, 328).

—————, intrusive in Dharwars (1134—4, 114).

—————, petrology of —, Bangalore (1606—2, 125).

—————, Chor Mt., Simla (1142—22).

---

\* *See* Introductory Note—Supplementary List.

Dolerite, petrology of—, Cuddapah (1025—4, 260).

—————, Cutch (143—2).

—————, Garhwal (1219—6, 21).

—————, Hazara (1219—17, 75).

—————, Mysore (1915—10, 20).

—————, Pahang Volcanic series (1933a, 460).\*

—————, Safed Koh, Afghanistan (793—4, 115).

—————, Shan States (1640—6, 145).

—————, Tochi valley (793—1, 67).

*Dolium variegatum* Lamk., occurrence in Makran (1854—47).\*

Dolmens, in India (1606a—3).\*

Dolomite, Bara series (1159—6, 34) (1406—6, 27).

—————, Ceylon, occurrence (438—8, 10).

————— and analysis (1283—2, 47) (720, 215) (1569).

—————, Gohna, Garhwal, analysis (859—12, 58).

—————, Marble rocks, Jubbulpore, analysis (1159—36, 113).

—————, Nagpur, analysis (786—2, 176 ; —3, 16).

—————, Salt Range, analysis (1892—19).

—————, Shan States, physical characters (1034—45, 186).

—————, South Mirzapur, analysis (1159—5, 42).

—————, Yunnan, occurrence (211—19, 226).\*

—————, method of analysis (35—27).

‘Dolomite series,’ Salt Range (1859—28, 4).

Dome gneiss, Bengal (1197—19, 42) (1159—7, 33) (570—47, 250).

—————, petrology (859—37, 47).

Dongargaon, Central Provs., fish remains from (1963).

---

\* See Introductory Note—Supplementary List.

*Dorabune*, dentition of (1406—22).

Dore ravine, Hazara, geological section (1219—13).

Dorunda, Ranchi, topography (510—1).

Dosi hill, Rajputana, petrology of granite (1142—14, 101).

Dothak series, Cent. Tibet (793—11, 162 ; —12, 141).¶

—————, age of (240, 238).

Drainage, of Son valley, evolution (1325, 36).¶

—————, underground, of Shan plateau (339) (1034—45, 23).

Drang, Mandi State, petrology of basalt (1142—5).

Dras, Kashmir, geology (1109—26, 18).

Dravidian group, defined (859—49, 11 ; —58, 46).

‘ Dreikanter,’ Ceylon (1905, 169).

*Dromæus* (?) *sivalensis* Lyd., note on (1109—62).

Dublin, catalogue of Siwalik vertebrates in (1109—54).

Dubrajpur stage, Rajmahal hills (1329, 1) (71—26, 198).

Dudatoli Mt., Garhwal, geological structure (1219—4, 135).

Dudkur, Godavari, infra-trappean beds at (987—18, 234).

Dumnapett sandstones, Godavari (987—14, 56).

Duncan, Dr. P. M., obituary notice (987—47).

Dunghan series, Baluchistan (1324—22, 94 ; —37, 21).

—————, horizon and fauna (1311—19 ; —26, 7).

Dunite, Chalk hills, Salem, analysis and petrology (1219—18, 33).

—————, Mysore, petrology (937—7, 69).

Dwarka beds, Kathiawar (569—6, 123) (11, 131).

Dyke, white trap, Chhindwara (612—2).

Dyke rocks, Bangalore (937—6, 101) (1606—2, 125).

—————, Cauvery dam (68—5, 151).

Dyke rocks, Kolar district, (1649—2, 159).

———, Mysore (596—46) (1915—1, 98 ; —10) (1549—2) (937—7, 92).

———, Narbada valley (173—5, 54).

———, Shimoga district (1649—4, 50 ; —10, 38).

———, associated with Charnockites and Dharwars (1854—46, 446).\*

———, *see also* Igneous rocks.

Dykes, basaltic, Bombay (288—23, 178) (320—2).

———, basic, Bundelkhand (1197—2, 75) (1328—71, 4).

———, Chor Mt., Simla (1142—22).

———, Garo Hills, Assam (1034—8, 41).

———, Hazara (1219—17, 75).

———, Hyderabad, Deccan (596—29, 29).

———, Indian Peninsula (1666—1) (988, 328) (859—18).

———, Jharia coal-field (888—1, 322).

———, Karharbari coal-field (888—3, 239) (864).

———, effect on coal (1545—3, 91).

———, Kathiawar (569—8, 100) (11, 77).

———, Khasi Hills, Assam (1326—8, 157) (1197—17, 201).

———, Kolar gold field (859—35, 80).

———, Malani series (1034—23, 25, 91).

———, Mohpani coal-field (1197—21, 66).

———, Narbada valley (1199—3, 223).

———, Nellore (987—17, 165).

———, Nilgiri Hills (110—1, 430 ; —3, 267) (147—3, 226).

———, Raniganj coal-field (1935—1, 100) (148—7, 141) (1869, 262).

———, effects on coal (1254—1).

---

\* *See* Introductory Note—Supplementary List.

Dykes, basic, Raniganj coal-field flow structure in (859—19).

———, Rupshu (793—6, 198).

———, Salem (272—10, 174) (859—30, 129).

———, Shapur coal-field (1197—38, 83).

———, Spiti (793—9, 98).

———, Tatapani coal-field (708—1, 151).

———, Travancore (1183, 3).

———, granitic, N. Hazaribagh (1159—7, 39).

———, mica-peridotite, Bengal (859—18).

———, olivine-norite, Coonoor (859—20).

———, pyroxenite, Ceylon (356—15).

———, ultrabasic, Salem (1219—18).

———, Tumkur district (1915—3).

Dysclasite, Poona, analysis (786—8, 114).

Dysluite, Padiyur\*, Coimbatore (1324—54, 129) (577—32, 37).

Dzongbuk shales, Cent. Tibet (793—12, 177).

## E

Earth, internal structure (1324—69; —79\*) (859—73; —79).

———, principal depressions on surface of (228—15).

———, rigidity of —, as affecting elevation of Himalaya (588—4; —5).

———, secular cooling of (1160).

Earth-eating habit, in India (869).

Earth fissures, produced by earthquakes (1327—1; 46) (1328) (1324—59, 85).

Earth measurements, affected by local attraction (1426—9; —10).

Earth movements, Archæan, in S. India (859—30, 139).

Earth movements, periodic, Colombo (73).

———, pleistocene, Indian Peninsula (1854—16).

———, pliocene, N. India (1406—13, 194 ; —24,\* 88).

———, recent, Afghan-Turkestan (708—13, 260).

———, Burma (1369—11, 208).

———, in India (228—3 ; —6).

———, Salt Range (1034—37, 39).

———, tertiary, Yünnan (211—13, 116).

Earth pellets, shower of —, at Ghazipur (1330—1).

Earthquake, Assam, 1607 (1503—1, 38).

———, July 6, 1845 (758).

———, January 22, 1849 (249—2).

———, April 11, 1870 (1690—1).

———, June 12, 1897, detailed report (1324—59).

———, diurnal variation in frequency of aftershocks  
(1324—64).

———, effects of —, in Assam (632) (1106).

———, in Bengal (168).

———, in Calcutta (1034—25).

———, on Assam-Bengal Railway (27).

———, electrical disturbances due to (1324—54, 252).

———, list of aftershocks (1324—60).

———, notices of (436—1) (1324—54, 130 ; —57) (1334—1).

———, recorded in Bombay (1261).

———, Edinburgh (800—1 ; —2).

———, Italy (13—1 to 5) (75) (152) (277)  
(686).

\* See Introductory Note—Supplementary List.

- Earthquake, Assam, June 12, 1897, trigonometrical results (239—1).
- , Badakhshan, January 1832 (235—13, Vol. II, 203).
- , Baluchistan, December 20, 1892 (708—25) (437—1).
- , October 21, 1909 (830—1).
- , Bannu, November 10, 1867 (535).
- , Bay of Bengal, December 31, 1881 (1871—9) (1324—6).
- , tidal effects (1509).
- , Bengal, August 26, 1833 (1971—1).
- , July 14, 1885 (1197—73) (1219—2).
- , Burma, March 23, 1839 (1987—4, 349).
- , February 16, 1871 (743).
- , Cachar, January 10, 1869 (1327—1) (669—15 ; —16) (1326—53)  
(1059—3).
- , secondary effects (1328).
- , Calcutta, November 11, 1842 (1435—2).
- , September 29, 1906 (1219—25).
- , December 6, 1906 (1219—25, 231).
- , Chittagong, April 2, 1762 (723—1 ; —2) (841) (1841) (1666—8, 1043†).
- , January 8, 1851 (867—6, Vol. II, 349).
- , December 15, 1865 (1653).
- , Cutch, June 16, 1819 (35—28) (1145—2) (1760) (235—11, 552 ; —13,  
Vol. III, 313) (1420—1, 84) (1666—8, 1027†)  
(1975—11, 29).
- , effect on wells in Gujarat (629—10, 111).
- *see also* Allah Bund.
- , April 29, 1864 (977).
- , Cuttaok, ? August, 1858 (1564—3).
- , Darjiling, February 28, 1849 (867—6, Vol. I, 376).
- , Ganjam, June 29, 1837 (1971—2).

---

† *See* Introductory Note—Supplementary List.

Earthquake, Ganjam, February 25, 1860 (430).

-----, Guntur, July, 1859 (523—1).

-----, Jalalabad, February 19, 1842 (1666—5 ; —7, 260).

-----, Kamrup, Assam, December 19, 1872 (1027).

-----, Kangra, April 4, 1905, area (437—2 ; —4) (1324—67).

-----, detailed reports (1219—27) (1334—3).

-----, effects of —, on altitudes at foot of Himalaya (751).

-----, notices of (1219—24) (35—30 ; —31) (859—54 ; —56, 81) (1007—2).

-----, recorded at Birmingham (437—3).

----- in Japan (1334—2).

----- in Paris (1264).

-----, Kashmir, June 26, 1828 (1846—4, Vol. I, 281).

-----, May 30, 1885 (952—1 ; —2) (1041, 43, 212).

-----, Kolhapur, July, 1853 (206—2).

-----, I ahore, January 22, 1832 (235—3 ; —13, Vol. I, 17).

-----, Malay Peninsula, May 17, 1892 (1482—3).

-----, Nandigama, Kistna, July 24, 1861 (1778).

-----, Nepal, August 26, 1833 (254) (267—1) (1666—8, 1046).

-----, Pegu, July 5, 1917 (234a).\*

-----, Pilibhit, March 31, 1852 (232).

-----, Punjab, March 2, 1878 (1975—20).

-----, Saharanpur, March 5, 1842 (1666—5, 249).

-----, Salem, March 4, 1861 (1660) (193).

-----, Sind, January 24, 1852 (1207).

-----, October 28, 1870 (35—29).

---

\* See Introductory Note—Supplementary List.



Earthquake, Southern India, December 17, 1859 (1001).

—————, February 2, 1860 (1501).

—————, Srimangal, Sylhet, July 8, 1918 (1723—10 ; —15).\*

—————, Travancore, August 11, 1856 (207—1 ; —2).

—————, Turkestan, August 22, 1902 (1324—62) (1334—4).

Earthquake fault, Baluchistan (708—25, 59) (1143, 291).

—————, Garo Hills, Assam (1324—59, 138).

————— motion, propagation to great distances (1324—58).

————— sounds, propagation (1324—59, 191).

Earthquakes, Afghanistan, 1505-1842 (1666—8, 1040).

—————, Arabic description of (1686).

—————, Aravalli Range, 1505-1842 (1666—8, 1056).

—————, Assam, 1839-1843 (761).

—————, January, 1849 (407—8) (938—5) (850).

—————, 1874-1877 (966—4 ; —5).

—————, 1878-1880 (47—1 ; —2).

—————, tidal periodicity (1324—61).

—————, Burma, May 1912 (211—12).

—————, Cutch, June 1845 (140—1) (1234).

—————, changes effected by (924—5, 64).

—————, Gangetic delta, 1738-1842 (1666—8, 1040†).

—————, Himalayan, 1803-1842 (1666—8, 1030).

—————, frequency of (851—2, 50).

—————, Indian, catalogue (1327—3).

—————, distribution (1666—10) (462—1, 656).

—————, during 1843 (1666—12).

---

\* See Introductory Note—Supplementary List.

Earthquakes, Indian, 1868 (1059—2).

—————, memoir on (1666—7 ; —8 ; —11).

—————, relation of —, to geology (462—3) (793—41).\*

—————, remarks on (148—60) (907).

—————, Kashmir, 1831-1832 (1666—8, 1044).

—————, Malabar coast (1775—2, 338).

—————, Salem, 1860-1861 (988, 365).

—————, Singapore (1085—3, 549).

—————, Vindhyan Range (1666—8, 1037†).

—————, Yünnan, 1909 (468—3).

—————, causes of (577—48, 66).

—————, effects of —, on tides on Indian coasts (1871—11).

—————, propagation of —, in interior of earth (1324—69).

—————, seasonal variation in frequency (1324—78).\*

—————, velocity of —, in laterite (207—4).

Earth salts, Bellary, analysis (1301—1).

—————, Madras, analysis (1193—1).

—————, *see also* 'Reh.'

Earth's crust, constitution of (1426—10).

—————, oscillation of level in (1426—2).

—————, thickness of (786—4) (1426—7).

East Coast, antiquity of (1324—46, 171).

—————, geology (596—17).

—————, recent elevation of (150, 89) (596—8, 16).

Eastern Frontier, topography (1384—2).

————— Ghats, geology (397—1) (987—7).

---

\* *See* Introductory Note—Supplementary List.

Eastern Narra, Sind, reports on (235—1 ; —11) (1418—1) (999) (925) (85—8 ; —10) (532).

Echinoidea, cretaceous, Karakoram (1690a—1).\*

———, tertiary, zonal distribution of (1854—20, 186).

Echinosphaerites limestone, in Shan States (1311—3).

Ecolomite, Mysore (169—1).

Education, mining, in India (1491).

Elaeolite, occurrence in Sivamalai, Coimbatore (1324—54, 251).

Elaeolite-syenite, Coimbatore (859—34).

———, Kishangarh State (1854—4).

Elastic sandstone, *see* Itacolumite.

Element, new, accompanying Zirconium (317—1).

Elephant, Asiatic, antiquity of (9).

———, fossil jaw of —, Narbada (1684—2 ; —5).

———, fossil tooth of —, Doab canal (287).

———, Nahar (65—1).

Elephant Rock, Kedah, geology (1884—1 ; —3, 164).

*Elephas antiquus (namadicus)* Falc. and Caut., occurrence in Godavari alluvium (1406—4).

*Elephas (Stegodon) ganesa*, Falc. and Caut., note on (1964—2).

Elevation, evidence of —, afforded by raised oyster banks (1763—14).

———, of Himalaya, fissure theory (1717—10).

———, period (1132) (1324—36) (879—1 ; —2) (148—84 ; —85).

———, recent, of Arakan Islands (742, 433) (1159—13, 190).

———, of Ceylon coast (634—1).

———, of East coast (150, 89) (596—8, 16).

———, of Kathiawar coast (569—6, 131).

- Elevation, recent, of Minikoi I. (634—3, Vol. I, 35).  
 ———, in Nicobar Is. (1487—1, 210).  
 ———, sub-recent, of S. coast of Peninsula (596—24, 55).  
 Elk, fossil, Siwalik hills (65—2).  
 Ellore, artesian well at (1854—2, 80).  
 Emery, memoir on (1663).  
 Emydine chelonian, Perim I., Cambay (1109—70).  
 ———, U. tertiary, Punjab (1763—23).  
 Encharani quartzites, Godavari (987—23, 229).  
 Endan R., Malay Peninsula, exploration (831).  
 Engineering College, Sibpur, mining department (1491).  
 Enstatite, in Basti aerolite (1184—6, 152).  
 Enstatite-diorite, Rajmahal hills (1142—21, 106).  
 Enstatite dolerite, Khyber pass (793—4, 115).  
 Enstatite rock, Bellary (596—39, 177).  
 Eocene, Andaman Is. (1787—9, 197).  
 ———, Assam Range (1326—8, 134) (1197—12, 13 ; —17, 160) (669—13, 12 ; —14, 152) (1034—3, 200).  
 ———, fauna (1117—9, 82) (1034—8, 42).  
 ———, Baluchistan (354—4, 185) (708—4, 21 ; —26, 120) (148—73, 148) (1324—32, 95 ; —37, 23) (1854—36, 194, 198).  
 ———, Baroda (596—40, 65).  
 ———, Bikaner (1034—24, 123) (1854—31).  
 ———, Burma (1763—16, 278) (1311—22, 62) (409, 617) (372—6) (1723—9, 249).  
 ———, fauna (1369—11, 13) (1406a).  
 ———, Cutch (691—3, 300) (1975—11, 74).  
 ———, echinoidea (513—2, 11).

---

\* See Introductory Note—Supplementary List.

- Eocene. Hazara (1860, 343) (1975—24, 126) (1219—17, 38).  
 ———, India, distribution and fauna (418) (288—13, 248).  
 ———, ———, fish remains from (1109—39, 63).  
 ———, Jaisalmer (1324—18, 159).  
 ———, Kashmir (1109—7, 156 ; —38, 90, 99).  
 ———, Kohat (1975—15, 155 ; —23).  
 ———, Ladakh (1109—22, 36 ; —26, 32 ; —38, 107).  
 ———, Mikir hills, Assam (1657—2, 81).  
 ———, Persia (148—49, 459).  
 ———, Persian Gulf (288—5, 120) (1406—10, 17).  
 ———, Punjab (1859—3) (1975—9 ; —14, 67 ; —17, 113 ; —21, 363) (1406d—1, 142).  
 ———, Salt Range (591—5, 333) (1763—1, 668) (1975—18, 105).  
 ———, Sind (1270, 333) (148—63, 37).  
 ———, fauna (147—1) (288—18) (569—4).  
 ———, molluscan (368).  
 ———, sub-Himalaya (1845—7, 72) (1197—3, 24 ; —5, 74).  
 ———, Suleiman Range (708—8, 186) (1034—20, 84).  
 ———, Surat (1975—5, 29).  
 ———, Tarim basin, fauna (1725, 463).  
 ———, Tibet (793—12, 171).  
 ———, fauna (499—3, 38).  
 ———, Tirah (793—4, 99).  
 ———, Tochi valley (1657—1, 107).  
 ———, Trans-Indus Salt Range (1975—28, 242).  
 ———, Waziristan (1839—2, Vol. xxxvi, 19).  
 ———, *see also* Nummulitic limestone.

Eozoonal limestone (?), Hyderabad, Deccan (986—1) (987—8, 47).

Epidiorite, Mysore, petrology (1915—10, 83).

Epidote, Jade mines, Burma (154—3, 268).

———, S. India, associated with corundum (448—3, 291).

*Episageceras*, note on genus (1311—44).

Equidæ, Siwalik and Narbada (1109—31).

Erinpura granite (1034—28, 18).

Erosion, caused by forest destruction in Coorg (124).

———, coastal, Bombay (1104—1, 762).

———, East coast (988, 362).

———, Kathiawar (1326—42) (1901).

———, Madras (915) (1128).

———, glacial, in Himalaya (1034—21) (1967—7, 100).

———, in Barakar sandstone, Sarguja (708—1, 187).

———, in N. W. Himalya (1291—5).

———, of pinnacled quartzites, Kurnool (987—, 61).

———, river, *see* River erosion.

———, wind, *see* Deflation.

Erratics, supposed, Goalpara hill, Assam (1375—5, 261).

———, Indian Peninsula (198) (1294—36; —40).

———, Kangra district (1763—20).

———, Nepal (1197—39, 100).

———, Potwar, Punjab (1763—24; —28; —32, 228) (1975—17, 123;  
—19; —21, 371; —22; —30; —31).

———, Salt Range (1763—25) (1975—18, 116).

Eruption, foci of —, in Konkan (320—3).

Eruptions, Arakan coast, *see* Mud volcanoes and Volcanic Islands.

Eruptions, Barren I. volcano, 18th century (1159—54).

———, explosive, Lower Chindwin, Burma (1324—68).

Eruptive rocks. Aden (238—2, 501) (1304) (1520) (1142—9) (1164, 174).

———, Aravalli range (1142—14).

———, basic, in Cuddapah system (1025—4).

———, Ladakh (1142—18 ; —37).

———, Sutlej valley (1142—17, 67).

———, Tibet (58) (59, 6).

———, Yünnan (1031, 370) (243—2).

———, *see also* Igneous rocks.

*Eryon* cf. *barrovensis* McCoy, Sripematur series (570—20).

Escarpments, Narbada valley (1199—3, 264).

Essönite (Cinnamon-stone), Ceylon, analysis (667—2) (1038—2).

*Estheria*, in Gondwanas (570—18).

*Estheria*, fossil, distribution (955—3 ; —4).

*Estheriella*, triassic, Malay Peninsula (955—5).

Estheriella shales, Malay Peninsula, age and locality (1295—5).

Estuarine beds, Calcutta (1854—14) (32).

———, description of oyster from (1297).

———, Madras (596—8, 16).

Euphyllite, S. Mirzapur (1159—5, 21).

Eur-Asia, desiccation (1015—3 ; —4).

———, orography (704—5).

———, upper palæozoic formations (1810).

Eur-Asiatic continent, in upper Carboniferous period (593, 401).

———, structure (704—4).

Eurite, Karharbari, petrology (864, 126).

*Eurydesma* horizon in Salt Range (1006—5).

Everest, Mt., determination of height (1904—1) (1426—5).

———, discovery (1782).

———, identification (849—8) (1871—14; —15) (624—1; —2) (235—5).

———, identified with Deodhanga (1904—2; —4).

——— Gaurisankar (624—6).

———, native names (849—6) (624—7, 354) (1863—8).

———, nomenclature (1576—4, 150) (1904—3) (1578—5) (1575) (624—5 —10; (1449—1) (1643) (1727).

———, northern aspect (1464—2, 212).

Exfoliation, of gneiss, Ceylon (1233—1; —2, 45).

———, of granite, S. India (1294—27).

Exotic blocks, Chitichun, Kumaon (708—24, 22; —35) (486—6, 375; —18) (1010—6).

———, fauna (486—9; —18, 62; —22).

## F

Fitted boulders and pebbles, *see* Boulders.

Falls, *see* Waterfalls.

Fan talus, Ladakh (502—1, 444).

———, Lissar valley, Kumaon (713—2, 296).

———, Suleiman Range (708—8, 189).

———, *see also* Alluvial fans.

Faridpur district, topography (639).

Fars series, Persian Gulf (1406—10, 26).

Fatehjang beds, Punjab (1406d—1, 146).\*

Fault, earthquake, Baluchistan (708—25, 59) (1143, 291).

———, Garo Hills, Assam (1324—59, 138).

---

\* *See* Introductory Note—Supplementary List.



Fault, main boundary, Himalaya (1197—5, 92 ; —60, 171) (1763—34, 94) (1219—10 173 ; —15) (1324—36, 16 ; —75,\* 152).

——, mining through (554).

——, overthrust, Shan States (1034—45, 136)\*.

——, reversed, Sub-Himalayan Zone, inclination (1219—34).\*

Faulting, evidence of —, in strata (1197—20 ; —54, 2) (148—26).

Fault lines, Mysore plateau, direction (1572—3, 109).

———, Palamau coal-field, correlated with coast lines (1339).

———, Cuddapah system (987—7, 259).

———, Deccan trap (1219—31, 128) (577a, 116).\*

———, Gwegyo anticline, Burma (1369—3, 263).

———, Karharbari coal-field (1545—3, 90).

———, Manbhum (71—46, 101).

———, Naini Tal (1219—12, 227).

———, Nilgiri hills (147—3, 229).

———, Palamau (71—32, 52).

———, Rajmahal hills (71—26, 225).

———, Ramgarh coal-field (71—2, 127).

———, Raniganj coal-field (148—7, 149) (1869, 266).

———, Satpura coal-fields (952—3, 51).

———, Shan plateau (1034—45, 353).

———, Talchir (150, 68).

———, Taungtha hills, Burma (372—3, 150).

———, Yenangyaung, Burma (1369—11, 70).

———, overthrust, Assam coal-field (793—18, 291).

———, parallelism of —, in Son-Narbada region (1199—2 ; —3, 228).

———, pleistocene, in Seistan (1854—37, 218).

---

\* See Introductory Note—Supplementary List.

Faults, reversed, in Sub-Himalayan Zone (1763—34, 94) (1324—8, 163) (1219—3, 38; —10, 172).

Fauna antiqua Sivalensis (562—9).

———, date of publication (1109—72).

———, description of plates (561—16, Vol. I, 421).

———, fossil mammalian, of India, synopsis (1109—4) (1406—13, 198).

———, fossil vertebrate, of India, history (1109—24; —75).

———, synopsis (1109—39).

———, pre-Carboniferous, distribution (1470—5).

———, recent molluscan, evolution in newer tertiary rocks of India (1854—43).

Federated Malay States, clays of economic importance (957—3).

———, corundum in (555—12).

———, geography (1294—5) (406) (1647—1; —2).

———, geological reports, 1905-1908 (1603—5; —6; —9; —17);  
1911 (1603—31).

———, geology (1757—3; —8).

———, gold mines (1603—2).

———, kaolin veins of (1603—39).\*

———, minerals (514—22).

———, monazite sand in (514—13; —17).

———, native copper with tin ore from (1603—18).

———, orography (1757—4).

———, physical features (1773) (411—3).

———, strüverite in (391—1) (1603—29).

———, tin deposits (1970—4) (1603—4; —26) (1533) (1307) (957—6).\*

———, tin ores (390—1) (514—20).

———, topography (1294—14, Vol. II) (1527) (1799).

\* See Introductory Note—Supplementary List.

Federated Malay States, *see also* Malay Peninsula, Perak, etc.

*Felis cristata* Falco. and Caut., described (562—4).

Felsite, petrology of —, Chamba (1142—16, 95).

—————, Malani series (1142—19).

—————, Raipur (173—8).

—————, Tusham hill, Rajputana (1142—14, 108).

Felsite dykes, Mysore (1549—2).

Felspar, undecomposed, in Eocene beds, Ladakh (1324—27, 155).

—————, in Panchet sandstone (148—7, 128).

—————, weathering of —, in tropics (1134—5, 539).

—————, zonal growth (1142—38, 592).

Felstone, Karakoram range, petrology (351—5, 51).

Fenestella series, Kashmir (1219—28, 222) (793—17).

—————, Spiti (793—9, 49).

Fergusonite, Ceylon (1437—1).

Fermorite, characters and composition (1659) (793—24, 61).

Fibrolite, S. India (448—3, 289).

Fibrolite-rock, Mysore (960—3, 60).

Fish, fossil, described by Dr. Cantor as 'Rana diluvii testis' (1117—27).

—————, distribution in India (1109—24, 12; —39, 61; —75, 69).

—————, from Deccan (1737).

—————, Gangamopteris beds, Kashmir (1611) (423—4).

—————, Lameta beds (1110, 23) (1963).

—————, Thian Shan (1061a).\*

—————, ganoid, Kota-Maleri beds (534).

—————, Indian freshwater, geological relations (1359).

---

\* See Introductory Note—Supplementary List.

Fish, permo-carboniferous, Salt Range (1859—7).

——, tertiary, of India (1109—65).

Fish-palate, Siwalik, described (725).

Fish-scale, Indian, notes on (533—4).

———, in bituminous shale, Kota (561—13).

Fish-teeth, Arakan (1397—2, 560).

———, Maleri beds (1326—20).

———, Pegu system (1723—7).

———, Ramri I. (1109—23).

———, western India (423—11).\*

Fishes, death of —, during monsoon, on W. coast (466).

Fissures, produced by earthquakes (1327—1, 46) (1328) (1324—59, 85).

*Flemingostrea*, described (1854—44).\*

Flexible sandstone, *see* Itacolumite.

Flint arrow tips, Andaman Is. (785—2).

—— cores, Sind (553).

—— implements, *see under* Implements.

Flints, ? chipped, of supposed miocene or pliocene age, Burma (1311—16 ; —29) (335) (1324—50) (148—87) (1733—1 ; —2) (1369—11, 53).

Flood, Indus R., November 1826 (235—11, 553 ; —13, Vol. III, 315) : June, 1841 (3—8) (561—7) : August 10, 1858 (1717—12) (93) (817) (1243—2) (1816—1) (1426—8) : August 1861 (909).

——, Mahanadi R., 1855 (771—1).

——, Morna R., July 14, 1886 (384—4).

——, Surat, August 28, 1837 (629—3).

——, Sutlej R., 1762 (399—5, 132).

Flood-discharges, Bengal rivers (908, 394).

———, Indian rivers (484—2).

Flood-discharges, Indian rivers, maximum (384—1 ; — 3).

Floods, Damuda R., 1859 (1668).

———, Disang R., Assam, 1869 (1875—2).

———, in diluvial plains (401—3).

———, Indian, 1849 (228—7).

———, Indus R., causes (399—5, 99) (502—3, 414).

———, Irrawaddy R. (677—6, 293) (1551a).\*

———, Jhelum R., Kashmir (1041, 205).

———, Jumna R., 1861-1865 (1630).

———, Kosi R. (839, 466).

———, Narbada valley (877).

———, Southern India (1714a—1 ; —2).\*

———, glacier, Western Tibet (1716—3, 55).

Flora, Arctic, elements of —, in Gondwana (570—19, 196).

———, fossil, *see* Damuda, Glossopteris, etc., flora and Fossil plants.

Flow-structure, in gneissose granite, Dalhousie (1142—3, 132).

———, Garhwal (1219—6, 25).

———, in igneous dyke, Bengal (859—19).

———, in Malani rhyolite (1034—28, 85).

Fluor spar, Aden (591—2).

———, Ceylon (1368—5).

Fluviatile deposits, *see* Alluvium and Gravels.

Flysch, eocene, Baluchistan (708—4, 30) (1854—36, 198).

Folding, in Cuddapah strata (987—7, 260).

———, in Deccan trap (577a, 103).\*

———, in gypsum beds, Fars series (1406—10, 28, 109).

---

\* *See* Introductory Note—Supplementary List.

- Foliation, in basio lavas, Garhwal (1219—6, 13).  
 ———, in Charnockite (859—31, 137).  
 ———, in elæolite-syenite, Coimbatore (859—34, 171).  
 ———, in gneiss, S. Malabar (1025—1, 211).  
 ———, in gneissose granite, causes of (1142—16, 103; —23; —25, 76; —26, 217—27; —34, 345).  
 ———, in schists, Garhwal (1219—4, 136).  
 Foote, R. Bruce, obituary notice (793—23, 7).  
 Foraminifera, distribution and character (288—3).  
 ———, in æolian sands, Kathiawar (302).  
 ———, Rajputana (1034—28, 39).  
 ———, internal structure of (288—11; —16; —22).  
 Foredeep, Himalayan, origin (239—9).  
 Forest, petrified, S. Konkan (1169).  
 ———, submerged, Bombay (1343) (1209) (1034—47).  
 ———, note on wood from (1704—3).  
 Formations, Indian, classification (148—81).  
 Fort Munro, Baluchistan, pseudo-fucoids from (1854—29).  
 Fort William, boring in, *see* Calcutta boring.  
 Fossil bones, Betwa R. (1845—1; —2).  
 ———, Calcutta boring (1436—28) (1666—3, 335).  
 ———, Gangetic delta (345—1).  
 ———, Hardwar (561—5).  
 ———, Hingoli, Deccan (698).  
 ———, Hyderabad, Deccan (1158—3).  
 ———, Irrawaddy R. (35—32) (1115) (95) (237—3; —4).  
 ———, Jubbulpore (1684—2) (1405—9) (561—16, Vol. I, 418).

Fossil bones, Jubbulpore, composition (1436—12; —15).

—————, fossilization (107).

—————, Jumna alluvium (242—1) (1436—17; —22) (1656—1; —2) (442—2; —3) (561—14, 379) (1109—35, 33) (1324—11).

—————, Kohat (716).

—————, Kushalgarh, Punjab (635).

—————, Narbada valley (1684—5; —8; —11; —13) (1436—19) (1521) (1215—1, 11) (1109—36).

—————, Siwalik hills (561—2; —4).

—————, Subathu (1845—4).

—————, *see also* Mammalia, Vertebrata, etc.

Fossil impressions, supposed, in limestone, Kumaon (1117—1).

Fossil plants, Assam coal measures (1610—5).

—————, in Kamthi sandstones (1158—6, 341; —10).

—————, Kathiawar (570—41).

—————, Nagpur (842—5; —6).

—————, Raniganj coal-field (1435—1, 98) (570—9; —19, 70).

—————, Royle's types of —, from India (38—1).

—————, Sarguja (570—41, 65).

—————, Satpura basin (570—36).

—————, Saugor district (1687—3; —5) (1117—32).

—————, Sheikh Budin (570—41, 64).

—————, Thian Shan (1590a).\*

—————, Yünnan, carboniferous (1988—3; —5).

—————, tertiary (1039).

Fossil shells, Bajgah, Afghanistan (789).

—————, Gawilgarh hills (1853—1).

---

\* See Introductory Note—Supplementary List.

Fossil shells, Jubbulpore (1684—3).

—————, Saugor district (1687—4 ; —5) (1684—7).

—————, Sichel hills, Hyderabad (1158—5 ; —7, 108 ; —8).

—————, *see also* Mollusca.

Fossil wood, Ballyganj, Calcutta (148—11).

—————, Burma (222—11, 238) (22—3) (226—1, 378 ; —2) (1763—6).

—————, microscopic characters of (855a—2).\*

—————, silicification of (1763—16, 252 ; —35) (1311—22, 83) (1369—11, 39)

—————, Godavari gravels (987—23, 298).

—————, India (1567—2).\*

—————, Sind (148—63, 141).

—————, Tipam series, Assam (1159—9, 297) (1369—13, 282).

—————, Tipperah (423—1, 350).

—————, Trivicary, Pondicherry (1891—2) (272—4 ; —11) (964—1, 38 ; —4, 86) (1294—38, 240) (288—13, 309).

—————, age and origin (1158—13, 110) (147—4) (309, 366).

' Fossil-wood series ' Burma (1763—6 ; —16, 247) (1311—22, 76) (1369—11, 29) =Irrawaddy system.

' Fossiliferous limestone of Pondicherry ' (1294—38, 213, 315)=Cretaceous.

Fossils, ? palaeozoic, in Krol beds (1854a)\* (793—39, 12 ; —42, 8).\*

Freshwater beds of Sur, Persian Gulf (1406—10, 54).

' Freshwater formation,' Central Provs. (1294—38, 219) (842—2, 65) (843, 357) = Lameta series.

Frog beds, Bombay, (320—1) (1975—1, 193, 217 ; —6).

—————, *see also* Intertrappean beds.

Fuchsite quartzite, Bellary (596—39, 139).

—————, Mysore (596—45) (1548—11, 35).

---

\* See Introductory Note—Supplementary List.



Fusulina limestone, Afghanistan (793—22, 26).

—————, Shan States (1034—45, 256, 259).

—————, Yasin (793—34, 294).

—————, Yünnan (468—5).

Fusulinidæ, internal structure (793—16).

## G

Gabbro, petrology of —, Ladakh (1142—37, 320).

—————, Naga Hills, Assam (1369—12, 258).

—————, Safed Koh, Afghanistan (793—4, 116).

—————, Tochi valley (793—1, 65).

—————, Travancore (297—2, 6).

—————, Yünnan (1004, 373).

Gadag band of Dharwar, geology (1134—4, 97).

Gadolinite, Palampur (859—43).

Gairsapa falls, Shiravati R. (85—33 ; —34) (313—1, 293) (1944) (1294—42, 416).

Gaj series, Andaman Is. (1787—9, 201).

—————, Baluchistan (708—4, 18).

—————, vertebrate fauna (606—1 to 6) (1406—9 ; —14).

—————, Burma (1855).

—————, Cutch (148—74, 3).

—————, echinoidea (513—2, 51).

—————, Kathiawar (569—6, 107) (11, 127).

—————, echinoidea (513—2, 80).

—————, Sind (148—46, 15 ; —56, 170 ; —63, 53).

—————, age and correlation (513—1, 104, 276) (1854—19, 91 ; —21, 267).

—————, corals (512—5, 81).

- Gaj series, Sind, echinoidea (513—1, 277).
- Galena deposits, N.-E. Putao (1723—13).\*
- Galle, Ceylon, variety of thorianite from (516).
- Gangamopteris beds, Kashmir (1311—45) (1219—26 ; —28, 236).
- \_\_\_\_\_, fish remains in (1611) (423—4).
- \_\_\_\_\_, fossil plants from (1611) (1610—2 ; —3).
- \_\_\_\_\_, stratigraphical position (793—14) (1219—26).
- Gangasulan Pargana, Garhwal, geology (1324—8).
- Ganges canals, reports on (292—15 ; —16).
- Ganges R., discharge of —, compared with that of Indus (235—2).
- \_\_\_\_\_, erosion of banks (1330—2) (1197—14) (1326—50).
- \_\_\_\_\_, flotation of sand on water of (1907).
- \_\_\_\_\_, geology of banks of —, Calcutta to Cawnpore (7—1).
- \_\_\_\_\_, lower course of (1473—2 ; —3, 253) (1034—36) (113) (338—4) (749, Vol. I, 6).
- \_\_\_\_\_, quantity of silt carried by (557—4 ; —6).
- \_\_\_\_\_, source of (337—1) (1459) (619—2 ; —4 ; —5) (851—1).
- \_\_\_\_\_, submarine cañon at mouth of (1781).
- Ganges valley, upper, geology (557—13).
- Gangetic alluvium compared with that of Irrawaddy (1763—9).
- \_\_\_\_\_, Nile (561—14).
- \_\_\_\_\_, conditions of deposition (1087—2) (1881—1, 320).
- \_\_\_\_\_, effect of —, on plumb-line in N. India (1324—73).
- \_\_\_\_\_, pleistocene fossils from (1406—3).
- \_\_\_\_\_, relations of —, to Siwaliks (1197—5, 152).
- Gangetic delta, conditions of deposition (1823, 494).
- \_\_\_\_\_, physical changes in (576—1 ; —2) (1326—63) (43).

---

\* See Introductory Note—Supplementary List.

Gangetic delta, rate of growth (1117—21).

Gangetic plain, geological history (1854—34).

—————, geology (1238).

Gangetic trough, nature and origin (1324—36, 70 ; —41, 471 ; —75,\* 213) (793—30 146) (239—9 ; —10\*) (431a).\*

Gangotri, description (619—4, 447 ; —5, 227).

—————, *see also* Ganges R., source.

Gangpur State, Gondite series in (577—37).

—————, topography (410—1, 6).

Ganjam district, geology (1657—3).

—————, topography (1162).

Ganurgarh shales, Bundelkhand (1159—3, 81).

Garhwal, crystalline and metamorphic rocks (1219—4 ; —5 ; —6 ; —11).

—————, geology of Gangasulan Pargana (1324—8).

—————, orography (1090—5).

—————, physical geology (1219—3 ; —10).

—————, Tal series in (1219—1).

—————, topography (765) (1459) (1797—1) (971, 136).

Garnet, acicular inclusions in (1021—2, 176) (859—16 ; —30, 127 ; —31, 161).

—————, as a geological barometer (577—43).

—————, flattened, in mica schist (169—1).

—————, manganiferous (577—32, 161).

—————, origin and growth (859—17).

————— sand, Ceylon (968 a).\*

Garó Hills, Assam, geological structure (1197—33, 61).

—————, geology (337—5) (1598—2) (1197—12) (669—17) (1034—1 ; —8).

—————, tertiary fossils from (1406d—3)\* (1854—51).\*

---

\* *See* Introductory Note—Supplementary List.

- Garro Hills, Assam, tertiary mammalia from (1389).
- Gas, natural, in bituminous salt, Kohat (1723—14).\*
- , Singpho hills, Assam (1034—7, 112).
- , *see also* Burning wells.
- Gaurisankar, Mt., identification (239—5) (624—10) (1643).
- Gawilgarh hills, W. Berar, geology (1853—1) (1975—7, 4).
- Gedrite-bearing rock, Mysore (1915—7).
- Geikielite, Ceylon (483).
- Gem sands, Burma (1405—21) (1854—6).
- , Ceylon (438—3) (720, 230) (1854—5).
- Gem stones, oriental accounts of (963) (1741).
- Geodes, origin of —, in trap (1153—8, 559).
- Geography, carboniferous period (114).
- , changes in —, of Punjab (1323—1; —2) (1324—19).
- , cretaceous period (1008—2).
- , evolution of Indian (1324—46).
- , Muhammadan, of Bengal (156—3).
- , permian period (1006—7).
- Geological history, Afghanistan (793—22, 73).
- , Malay Peninsula (1603—33).
- , Southern India (1652—21).
- , Upper Burma (1034—45, 347).
- Geological maps of India (699—1; —3) (700—1; —2) (71—34) (1197—49) (1324—42).
- Geological Museum, Calcutta, history (1034—41).
- *See also* Museum of Economic Geology
- Geological section, Nimach to Merta (764—7, 92; —9).

---

\* *See* Introductory Note—Supplementary List.

Geological sequence, Baluchistan (1854—36, 198).

———, Central India, classification (1326—12).

———, correlation (1326—23 ; —32).

———, Hazara, correlated with Kashmir (1975—24, 127 ; —32).

———, N. W. Himalaya, correlation (1712—5, 132).

———, Salt Range, revision (1892—14, 119) (987—42, 154) (1859—23, 44) (1311—38).

Geological Survey of India, history (1173—4, 207).

———, progress in S. India (596—23).

——— to 1857 (1326—16).

——— to 1870 (1964—1).

——— to 1879 (148—64).

Geological surveys, reports on —, *see* Federated Malay States, India, Mysore and Travancore.

——— time, and the antiquity of man (793—44).\*

——— traverse, Almora-Mussoorie (1324—4).

———, Bellary-Bijapur (1294—23 ; —24).

———, Benares-Barrackpur (1524).

———, Calcutta-Ghazipur (557—1).

———, Delhi-Baltistan (557—14).

———, Gooty-Hyderabad (1294—51).

———, Madras-Bellary (397—1).

———, Madras-Goa (1294—43).

———, Madras-Hyderabad (1853—7, 189).

———, Mangalore-Madras (1294—44).

———, Masulipatam-Goa (1294—32).

———, Mirzapur-Saugor (557—8).

---

\* *See* Introductory Note—Supplementary List.

Geological traverse, Mussoorie-Gangotri (557—13).

—————, Mysore (1294—16) (596—41) (1652—3).

—————, Nagpur-Singhbhum (1853—7, 853).

—————, Nellore-Honawar (1294—42).

—————, North Kanara-Cuddapah (1294—49).

—————, Northern Shan States (1311—4) (424—3) (1034—26).

—————, Pondicherry-Beypur (1294—45).

—————, Pondicherry-Salem (1062—1).

—————, Poona-Nagpur (148—21).

—————, Seringapatam-Cannanore (1294—48).

—————, Singareni-Hyderabad (596—29).

—————, Singareni-Kistna R. (596—28).

—————, Southern Shan States (1219—22).

—————, Tellicherry-Madras (55).

Geology of India, manual (1198) (1324—41) (1863a—2).\*

—————, economic (71—45).

—————, mineralogical (1159—50).

—————, summary (1294—38) (288—13) (699—2) (512—3) (460) (102).  
(1025—6) (1456) (859—49) (1854—25).

Geysers, Naisum Chuja, Tibet (1243—10, 318).

Ghaggar R., former course of (79—2, 301).

Gharial, fossil, from Siwalik hills (292—7).

Ghatparbha R., fossil rhinoceros from (596—10).

—————, ossiferous beds in (596—12, 232).

Ghazij series, Baluchistan (1324—32, 95) (1854—36, 195).

—————, Sulciman Range (1034—20, 86).

—————, age of (1854—19, 87).

---

\* See Introductory Note—Supplementary List.

Giants' kettles, *see* Pot-holes.

Gibbsite, Palni hills, analysis (1892—26 ; —27).

———, occurrence in laterite (1134—5, 544).

——— with manganese ore (577—13).

Gilgit, geology (1142—36) (793—34, 296).

———, physical features (1268) (904).

———, topography (795—2) (1175).

Gilgit R., source of (1063).

Giraffe, fossil, from Siwalik hills (562—7, 240).

Giraffidæ, fossil, of India, described (1406—13a).\*

———, evolution (1109—35, 30).

Giri limestone, Cent. Tibet (793—12, 162).

Giridih coal-field, geology (1545—3) (865).

———, petrology of igneous rocks (864).

———, *see also* Karharbari.

Giurnal sandstone, (1712—5, 113) (708—24, 21).

———, age of (793—9, 86).

———, fauna (1685).

Glacial action, absence in S. India (1294—36 ; —40) (148—43).

———, palæozoic, in S. Africa (148—90).

Glacial beds, early tertiary, upper Indus valley (1324—27, 155).

Glacial erosion, of Pangong lake basin (897—6).

Glacial origin, of Kumaon lakes (1763—30).

———, of Salt Range boulder bed (148—79) (1892—16) (1210—14, 22)  
(548) (1007—1, 97).

Glacial period, palæozoic, in Australia (428) (1386) (704—3).

———, in S. America (1859—22).

---

\* *See* Introductory Note—Supplementary List.

Glacial period palæozoic, in Tropical India (148—40 ; —78) (147—18, 528 ; —21)  
(71—38) (570—54) (1859—21) (149) (620—4) (1399).

—————, causes of (1324—10, 192 ; —20) (1006—7 ; —8).

—————, pleistocene, effect on distribution of Indian vertebrates (148—91,  
435).

—————, evidence of —, in India (1324—41, 14) (1034—43).

————— in Punjab (1763—32).

—————, *see also* Erratics.

Glaciation, pleistocene, Central Asia (933, 257) (1015—1).

—————, Central Tibet (793—11, 167 ; —12, 135).

—————, Central Turkestan (897—1, 182).

—————, Dhauladhar Range (1197—5, 155) (1142—4, 49).

—————, Himalayan (148—85, 168) (669—25, 588) (486—8) (704—6).\*

—————, supposed absence (1590, 394) (273) (147—20)  
(294—2) (1197—46 ; —47) (669—22) (1763—26) (879  
—1, 101 ; —3).

—————, Hindu Kush (708—18).

—————, Kangra district (1763—20).

—————, Kashmir (1777—3, 478) (1109—17, 29 ; —26, 43 ; —38, 32)  
(1321—1, 48 ; —4, 435).

—————, Kumaon (1717—9, 71) (1197—65, 127) (713—2, 302).

—————, Pamir (1442, 133).

—————, Pangi, Chinab valley (1142—3, 310).

—————, Punjab (1796).

—————, Sind valley, Kashmir (1704—4) (1324—66).

—————, Spiti valley (1142—2, 66).

—————, upper Indus basin (502—1).

Glacier, Alchori, Kashmir (1966—2, 351).

—————, Alukthang, Sikkim (1623—1, 471) (173—14) (624—7, 222).

---

\* *See* Introductory Note—Supplementary List.



Glacier, Alukthang, Sikkim, demarcation (1034—38, 52).

——, Bagini, Kumaon (1267, 78).

——, Baling, Kumaon, demarcation (713—2, 284).

——, Baltore, Kashmir (669—4, 36) (351—4, 430) (722—2, 143, 167) (451—1  
20 ; —2, 161) (573).

——, Barche, Bagrot, demarcation (793—13, 130).

——, Barmal, Kashmir (1967—3, 36) (1966—4, 127, 146) (1291—5, 353).

——, Baspa, Kashmir (855, 342).

——, Bhot Kol, Kashmir (1967—3, 36) (1291—2 ; —5, 353) (1966—4, 146).

——, Biafo, Kashmir (669—4, 29) (351—4, 352) (1966—1, 104 ; —5, 177).

——, Chingchingmauri, Kumaon, demarcation (713—2, 287).

——, Chogo-Lungma (Arindo), Kashmir (1846—4, Vol. II, 285) (669—4, 46)  
(502—3, 366) (1967—1, 250) (1966—2, 69, 168) (1321—3).

——, Fariabad, Kashmir (1967—3, 33).

——, Haramosh, Kashmir (1966—2, 121).

——, Hassanabad, Hunza, advance (196) (793—19) (1967—6).

——, demarcation (793—13, 135).

——, Hinarche, Bagrot, demarcation (793—13, 127).

——, Hispar, Nagir (351—1 ; —2, 296 ; —4, 326) (1966—3 ; —5).

——, demarcation (793—13, 133).

——, rocks and minerals from (1505—1 ; —2).

——, secular movements (257) (258).

——, Hoh-Lumba, Kashmir (1965—4) (1966—2, 200).

——, Ibi-Gamin, Hundes (1572—1, 322).

——, Kangchen, Nepal (624—4, 469) (1920—1, 56).

——, Kharsa, Kumaon, demarcation (713—2, 287).

——, Kinchinjau, Sikkim (867—8, Vol. II, 133, 180).

——, Kuphaini, Kumaon (1717—1, 802).

Glacier, Lonak, Sikkim (1920—1, 92).

———, Mechoi, Kashmir (1324—66, 150) (1187) (1291—3, 343).

———, Milam, Kumaon (1573—1, 153 ; —2, 263).

———, demarcation (373—1, 152).

———, rate of movement (1717—15, 154).

———, Minapin, Nagir, advance (196).

———, demarcation (793—13, 131).

———, Nampa, Nepal (1090—1, 214 ; —4, 203).

———, Naulphu, Kumaon, demarcation (713—2, 285).

———, Nipchungkang, Kumaon, demarcation (713—2, 286).

———, Pindari, Kumaon (1151—2) (1717—1).

———, demarcation (373—1, 149).

———, rate of movement (1717—4).

———, Poting, Kumaon, demarcation (373—1, 156) (713—1).

———, Przewalsky, Pamir (806—1, 325).

———, Punmah, Kashmir (669—4, 30).

———, Raikana, Garhwal (1267, 156).

———, Remo, Kashmir (451—5, 93).

———, Saltoro, Kashmir (1846—4, Vol. II, 384) (1090—6, 624).

———, Shafat, Kashmir (1965—5, 94) (1967—3) (1966—4, 35).

———, Shankalpa,\*Kumaon, demarcation (373—1, 154).

———, Shigri, Lahaul, demarcation (1870, 144).

———, Siachen, Kashmir (1090—6, 642) (1965—6 ; —7) (1210—2) (1966—6, 121).\*

———, geology and physical features (1967—8).

———, Sona, Kumaon, demarcation (713—2, 284).

———, Sonapani, Lahaul, demarcation (1870, 141).

Glacier, Sosbon, Kashmir (1965—4, 134).

———, Talung, Sikkim (1616).

———, Tarshing, Kashmir (502—3, 399).

———, rapid advance of (1291—1).

———, Umasi La, Kashmir (1777—3, 350).

———, Yengutsa, Nagir, demarcation (793—13, 134).

———, secular movement (257) (258) (1966—3, 107).

———, Zemu, Sikkim (854, 616) (624—3, 167 ; —7, 95) (1920—1, 68).

———, demarcation (1034—38, 57).

Glacier ice, colour and structure (713—1, 107 ; —2, 315).

———, stratification (1034—38, 56) (1967—7, 94).

Glacier lakes, Kashmir (608—2, 114) (1966—3, 119 ; —5, 222) (451—2, 210).

———, discharge of (1449—2) (1967—2).

———, floods caused by (1291—5, 349).

Glaciers, Cent. Himalaya (1573—3, 123) (708—20, 29).

———, comparative length (1717—15, 411).

———, Garhwal (1090—5).

———, Himalayan, fluctuations (859—61) (169—3).

———, former extent (1197—5, 155) (1142—4, 49) (148—5, 168)  
(669—25, 538) (704—6).\*

———, mean temperature of ends (1578—9).

———, present extent (1576—9, 368) (1578—10) (1243—13) (1745, 410).

———, rate of movement (1717—4).

———, shrinkage (1572—3, 131 ; —4, 201).

———, Hindu Kush, former extent (708—15, 25 ; —18).

———, Karakoram range (351—4) (169—2) (1965—1 ; —2 ; —3) (1966—2 ; —5)  
(1090—6) (5) (1312—1) (451—2, 161) (1966—6).\*

---

\* See Introductory Note—Supplementary List.

- Glaciers, Karakoram range, pressure phenomena in (1967—7).  
 ————, temperatures in (1967—2).  
 ————, Kinchinjunga (867—6, Vol. II, 57) (854) (624—4 ; —8, 620) (971).  
 ————, map of (637—1).  
 ————, Lahaul, rate of movement (1607).  
 ————, Mustagh Ata, Pamir (806—2, 357 ; —3).  
 ————, Mustagh Range (1243—3) (669—4) (351—2) (1986—1, 508 ; —2).  
 ————, Nun-kun, Kashmir (1291—2) (1966—4).  
 ————, Oprang valley (1986—3, 210).  
 ————, Shayok valley (1777—3, 408) (1615—1, 432) (103—3, 161) (669—34).  
 ————, secular movements (806—11) (1090—6, 647) (1331—1).  
 ————, Thian Shan Range (1211—2 ; —3, 80).\*  
 ————, upper Indus valley (669—3).  
 ————, western Tibet (1716—3, 52).  
 ————, western Yünnan (1883—3).\*  
 'Glacis,' Baluchistan (1756—1, 103 ; —2, 230).  
 ———— calcareous, Rajputana desert (1034—28, 12).  
 Glauberite, Salt Range (1570).  
*Glossopteris*, fructification (38—3, 39).  
 ————, mode of attachment to rhizome (551) (1324—51, 69 ; —53).  
 ————, occurrence in Asia Minor (570—19, 201).  
 ———— Panchet beds (570—19, 139).  
 ————, range of (570—30, 810).  
*Glossopteris* flora, affinities (38—3, xx).  
 ————, age (570—32 ; —33).  
 ————, composition and distribution (1610—1) (38—2 ; —3).

---

\* See Introductory Note—Supplementary List.

Glossopteris flora, discovery in Argentina (148—88) (1017) (1018) (1988—1).

————— Kashmir (859—38, 22).

Gnari Khorsum, *see* Hundes.

Gneiss, Amherst, Burma (1340—1).

————, Assam Range (1197—17, 196).

————, Bangalore, petrology (1915—8) (1806—2, 112).

————, Bashahr (1712—5, 10) (1324—22, 160).

————, Bengal (1197—19).

————, analysis (1344).

————, Bhavani dam site, structure (859—32).

————, Bundelkhand, petrology (1142—31).

————, Carnatic, varieties (988, 269).

————, Cauvery dam site, petrology (68—5, 144).

————, Ceylon, exfoliation (1233—1 ; —2, 45).

————, petrology (1021—1 ; —2) (1203, 91, 96) (487, 262) (356—1. 600).

————, Chindwara, petrology (577—6, 180).

————, Chota Nagpur, petrology (1134—1, 69).

————, Darjiling, metalliferous character (910—2).

————, petrology (1366—2).

————, Dihing basin, Assam (1034—7, 113).

————, Godavari district (987—18, 206).

————, Gwalior (730—1, 33).

————, Hassan district, Mysore, petrology (1549—7, 35 ; —9, 78 ; —10 99).

————, Hazaribagh district (1159—7, 33).

————, Hundes (793—6, 197).

————, Kadur district, Mysore, petrology (1549—11, 62).

————, Karakoram Range, petrology (351—5, 46) (451—2, 430).

- Gneiss, Kashmir (1712—25, 13) (1109—22, 28 ; —23, 5 ; —38, 266).
- , Malabar, petrology (1025—1, 209).
- , Mirzapur, mineralogy (1195—5).
- , Mogôk, Burma (208, 194) (1034—45, 33).
- , Mysore, lithology and origin (1652—18, 54 ; —21, 147).
- , Mysore district, petrology (1450, 131) (937—7, 54).
- , Nellore district (987—17, 125).
- , Pir Panjal, Kashmir (1109—7, 158, 161).
- , Rupshu, petrology (793—9, 94).
- , Salem, corundum-bearing (1219—19, 41 ; —21, 119).
- , petrology (1021—1 ; —2) (859—30, 107).
- , Shimoga district, Mysore, petrology (1649—4, 39 ; —10, 3) (1606—5).\*
- , Sikkim, (637—3, 289).
- , Travancore (987—25, 89).
- , Vizagapatam district (987—33, 149).
- , calcified, beneath Deccan trap (741a—2).\*
- , central, of Himalaya, *see* Central gneiss.
- , granitoid, *see* Granitoid gneiss.
- Gneissic zone, S. Shan States (1219—22, 128).
- Gneissose granite, Chor Mt., Simla, intrusive character (1324—22, 159).
- , Dalhousie, analysis (1142—33, 290).
- , petrology (1142—8 ; —13, 64).
- , Darjiling (1159—6, 43).
- , Garhwal, age (1219—4, 142 ; —5, 167).
- , flow structure in (1219—6, 25).
- , petrology (1219—4, 138).

---

\* *See* Introductory Note—Supplementary List.

Gneissose granite, Hazara, petrology (1219—17, 61).

———, Himalaya, causes of foliation (1142—23 ; —25, 76 ; —26, 217 ; —27) (1324—24).

———, contact metamorphism due to (1142—38).

———, eruptive character (1142—18, 104).

———, structural characters and age (1142—26 ; —33 ; —34) (1197—81, 66).

———, temperature of fusion (1142—41).

———, termination at Dalhousie (1197—5, 64).

———, in Salt Range boulder-bed (1219—16, 30).

———, Sutlej valley, intrusive character (1324—27, 149).

———, petrology (1142—17, 66).

———, Tehri-Garhwal, petrology (1219—3, 28).

Goaf-blasts, in Giridih coal-field (10—2).

Goalpara, Assam, supposed erratics at (1375—5, 261).

———, topography (1320).

Godavari district, geology (987—12 ; —14 ; —18).

———, Rajmahal flora (570—3, 39 ; —15)

———, topography (1255).

——— gravels, agate flake from (1975—2) (1326—47).

———, mammalian remains from (148—21, 61 ; —22, 232) (1406—4).

——— river, exploration (1811).

——— valley, Damudas in (148—28).

———, plant-bearing sandstones (148—27 ; —29 ; —30).

———, quartzite implements from (148—32).

———, topography (357—2).

———, upper, geology (987—14, 60 ; —19 ; —23) (888—22).

Godwin-Austen, Mt., see K<sub>2</sub>.

Gogra R., course of (113) (638).

Gohna landslip and lake (859—12 ; —15) (148—86) (665) (1717—14).

Gokak falls, Ghatparbha R. (130—1, 70) (1294—41, 277) (596—12, 87).

Golabgarh pass, Kashmir, geological section (1219—26, 288).

—————, Gondwana plants from (1610—3).

Golapilli series, Godavari (987—14, 57 ; —18, 212).

—————, flora (570—15).

Gold, Ceylon (489) (492).

———, Malay Peninsula (1913—1) (500) (1765) (1603—2).

———, Mysore (68—8). \*

———, Tibet, analysis (962).

———, Tungabhadra R. (68—7).\*

———, native processes of refining (1436—21).

Gold-bearing conglomerates, E. Bokhara (1010—1).

Gold crushing mills, ancient, Chota Nagpur (859—40) (1134—1, 67).

—————, Dharwar (1134—4, 122).

Gold digging ants, Tibet (1436—18) (1846—4, Vol. II, 287) (399—5, 232) (1568).

Gomal pass, description (1846—3, 67).

Gondite series (577—32, 306 ; —36).

—————, distribution in India (577—37, 19).

Gondwana amphibia, synopsis (1109—39, 64 ; —75, 68).

————— beds, alleged occurrence in Palnad (37—2 ; —3 ; —4) (1326—54, 25 ; —66, 7) (1197—64).

—————, Kashmir (1311—45) (1219—38, 236).

—————, stratigraphical position (793—14) (1219—26).

—————, *see also* Gangamopteris beds.

————— fish, synopsis (1109—39, 62 ; —75, 70).

---

\* See Introductory Note—Supplementary List.



Gondwana flora, age and composition (570—10; —25) (1326—23, 316) (1988—4).

———, correlation (570—43; —44) (1324—10).

———, distribution in India (570—48).

———, list of genera and species (570—31, 39).

———, revision (1610a)\*.

———, systematic review (570—53, 51).

———, labyrinthodonts (1109—34).

———, reptilia, synopsis (1109—39, 64; —75, 67).

———, system, age and correlation (147—18) (148—47; —51; —78) (570—8; —10; —11; —23; —25; —55) (1326—23; —32; —78) (1859—21, 145) (1695—2) (1006—7, 482).

———, classification (148—5) (71—39) (620—4, 606) (372—12).\*

———, definition (1197—59, ii).

———, distribution (1326—75) (1695—1).

———, evidence of occurrence of Theriodonts in (1353—5).

———, homotaxis (148—75, 696) (1109—69) (1324—41, 191).

———, palaeontological relations (148—55).

——— (lower), correlation (1170, 126) (1324—15).

——— (upper), correlation (570—11).

———, synopsis of fossils (570—7, ix).

Gondwanaland, ancient geography (1017) (1008—2) (148—89) (114).

———, definition (1724—2, Vol. I, 767).

———, evidence of existence (148—83, 99).

———, extent (148—88) (1324—46, 173) (40).

———, geological history (1859—6).

———, palaeozoic glaciation (704—3).

*Goniomya*, cretaceous, S. India (423—2).

---

\* See Introductory Note—Supplementary List.

Gopeng beds, Malay Peninsula (1603—27 ; —33, 349).

—————, non-glacial origin (957—4)\*.

Gorakhpur district, *reh* salts of (1073—2).

—————, soils (1073—1).

—————, topography (1181, Vol. II, 291).

Gorge, *see* River gorge.

Goudelour sandstone, *see* Cuddalore series.

Gradient, variations of —, in Peninsular rivers (1854—16, 36).

Grandite, composition and occurrence (577—32, 165, 181).

Granite, Balangoda group, Ceylon (356—14).

————, Bangalore, petrology (1606—2, 111).

————, Baroda (596—40, 22).

————, Bundelkhand (1854—18, 264).

————, Burma, weathered forms of (1362—2, 136).

————, Cent. Himalaya (708—20, 42).

————, Cent. Tibet, petrology (793—11, 168 ; —12, 180).

————, Ceylon, petrology (487, 265) (356—1, 601).

————, Chamba, intrusive in "Central gneiss" (1142—4, 48).

————, Chhindwara, petrology (577—6, 175).

————, Chitaldrug, petrology (1548—6, 114) (1549—1, 58 ; —10 104).

————, Chor Mt., Simla, petrology (1142—13, 61).

————, Closepet, Mysore, petrology (937—6).

————, Deosir hill, Rajputana, petrology (1142—14, 114).

————, Erinpura, Rajputana (1034—28, 18).

————, Gilgit, petrology (1142—86, 340).

————, Hassan, Mysore, petrology (1549—3, 29).

---

\* *See* Introductory Note—Supplementary List.

Granite, Hindu Kush (708—15, 21).

———, Hundes, petrology (793—6, 198).

———, Hyderabad, Deccan, weathering of (1853—6, 300) (1751—2, 30).

———, Jessai hill, Jodhpur, petrology (1142—19, 163).

———, Jeypore, Vizagapatam, petrology (1872—2, 168).

———, Jhelum valley, petrology (1142—31, 263).

———, Kadur, Mysore, petrology (1915—6, 99) (1649—6, 7; —9, 38) (937—8, 86).\*

———, Karakoram range, petrology (351—5, 46) (170, 469).

———, weathering of (1966—6, 50).\*

———, Khanak hills, Rajputana, petrology (1142—14, 113).

———, Khasi hills, Assam (1326—8, 151) (1197—17, 203).

———, Kolar, Mysore, petrology (1649—2).

———, Kumaon, petrology (1219—11, 30).

———, Mandlaisir, Narbada valley (1707—2) (3—4).

———, Mt. Abu, Rajputana, petrology (1142—31).

———, Mysore district, petrology (1450, 133) (937—7, 55).

———, Naniazeik, Burma, petrology (154—2, 165).

———, Nellore (987—17, 164).

———, Nigana hills, Rajputana, petrology (1142—14, 114).

———, Nilgiri hills, alteration of (348—1).

———, Pangi, Chinab valley, petrology (1142—13, 54).

———, Putao, Burma, petrology (1723—13, 247).\*

———, Rajputana, petrology (830—6, 92).\*

———, Sangrampur, Bundelkhand, origin (1197—2, 17; —8).

———, Shimoga, Mysore, distribution and petrology (1649—1, 119; —4, 38; —10, 5) (1606—5, 136).\*

---

\* See Introductory Note—Supplementary List.

- Granite, Singapore, petrology (1603—12, 19 ; —19, 422).
- , weathering of (1085—2, 327 ; —8, 4).
- , Siwana and Jalor, Rajputana (1034—28, 24).
- , Spiti, petrology (1142—2, 60 ; —13, 54) (793—9, 97).
- , Southern India, distribution (1294—38, Vol. IX, 1).
- , exfoliation (23, 331) (987) (1294—27).
- , Sutlej valley, petrology (1159—27) (1142—1, 221 ; —13, 55).
- , temperature of fusion (1142—38, 589).
- , Tawngpeng, Burma, petrology (1034—45, 59) (211—20, 137)\* (1094a—2, 208).\*
- , Tenasserim, distribution (1340—2, 392) (173—17).
- , petrology (154—4, 58).
- , Travancore, magnetic quality (207—3).
- , Trichinopoly, distribution (988, 335).
- , weathering of (834—2, 191).
- , Tumkur, Mysore, petrology (1915—5, 54).
- , Tusham hill, Rajputana, petrology (1142—14, 111).
- , Yünnan, petrology (1004, 364).
- ‘ Granite formation,’ Salem, Madras (272—10).
- Granite-gneiss, Kolar, Mysore, petrology (859—35, 74).
- Granite, gneissose, *see* Gneissose granite.
- Granitic intrusions, Son valley (1325, 4).
- rocks, Narbada valley (1199—3, 120).
- Granitoid gneiss, Dosi hill, Rajputana, petrology (1142—14, 101).
- , Kalahandi, petrology (1872—3, 5).
- , South Arcot (988, 298).
- Granophyre, Pahang volcanic series, petrology (1933a, 457).\*

---

\* *See* Introductory Note—Supplementary List

Granophyre, Salt Range boulder-bed, petrology (1219—14, 33).

———, Singhbhum, petrology (859—71, 18).

Granulite, Ceylon, petrology (1203, 92) (487, 234) (356—1, 596 ; —9) (1366—1).

———, Chhindwara district, petrology (577—6, 179).

———, Ganjam, petrology (1657—3, 158).

———, Hazaribagh, cassiterite-bearing (577—11).

———, Mogok, Burma, petrology (208, 201).

———, Mysore, petrology (1915—10, 85).

Graphite, geological occurrence and characters (459—1) (903) (555—15).

———, Ceylon, associated minerals (1553).

———, commercial position (574).

———, composition (930) (1908).

———, electrical resistance (1005).

———, foliation (787).

———, in decomposed gneiss (1881—2).

———, including matrix (356—17, 53).

———, method of mining (1715—2).

———, occurrence and origin (487, 274) (1910—1 ; —2) (356—1, 609)  
(720, 220) (1045) (358—2) (84).

———, specific heat (117).

———, Travancore, pseudo-crystals of (1787—15).\*

———, growth of cerium sulphate on (1723—16).\*

———, Turkestan (1319—1).

Graptolites, discovery in Upper Burma (1034—26, 83 ; —45, 163).

———, in S. Shan States (953—3).\*

Gravels, fluvatile, Nuwara Eliya, Ceylon (970).

———, high-level, Potwar, Punjab (880, 248).

---

\* See Introductory Note—Supplementary List.

Gravels, percolation in —, as affected by current (1197—71).

———, plateau, Burma (1369—11, 49).

———, *see also* Ossiferous gravels.

Gravity, determinations of —, in India (1532) (1058).

———, variation in India (588—1) (859—74).

'Great limestone,' Jammu, Kashmir (1109—7, 157) (1197—41, 53) (1034—9, 63) (1972—2).

———, S. Shan States, Burma (1219—22, 130).

Greenovite, Narukot (577—32, 201).

Greisen, cassiterite-bearing, Burma (859—42).

———, wolframite-bearing, Burma (154—4, 69).

'Grey limestone,' Hazara (1219—17, 39).

———, Kumaon (1010—6, 132)=Kioto limestone.

Griesbach, C. L., obituary notices (486—31) (859—66, 9) (1786—2).

Grit, definition of term (1197—11).

'Gritty sandstones,' Carnatic (596—24, 35) ?=Cuddalore series.

Ground, high temperature of, Suyam, Kashmir (1846—4, Vol. I, 280) (561—16, Vol. I, 567) (1041, 42) (1009, li).

———, temperature of —, at Trivandrum (259).

Ground ice, in tropical India, Talchir period (569—3).

———, note on formation (1324—48).

Groynes, effect of —, on Madras coast (1128).

Gudadrangayanhalli series, Chitaldrug (1549—1, 82).

Gujarat, alluvium (148—22, 233).

———, artesian wells in (1854—2, 69) (1034—39, 103).

———, geology (1104—1, 764) (1341—2) (228—17) (1507—2) 1762—27).

———, topography (873) (654—1).

———, water supply (1679—12).

Gulcheru quartzite, Cuddapah (987—7, 148).

Gulf of Cambay, bore in (552—2).

—————, silting of (1091—1) (1679—7) (1507—2, 120).

—————, tides in (944—2) (1679—9).

Gulf of Cutch, physical features (629—8).

Gumti R., cross section of (1800).

Gunong Bakau, Fed. Malay States, tin mining in (957—6).\*

—————, topaz-bearing rocks of (1603—34) (957—5).\*

———. Benom, Fed. Malay States, geology (78, 9).

———. Bintang, Fed. Malay States, description (1049).

———. Bubu, Fed. Malay States, ascent of (1757—2).

———. Riam, Fed. Malay States, geology (1603—30, 15).

———. Tahan, Kelantan, geology (1603—8 ; —30).

Gurla Mandhata (Mt.), Hundes, ascent of (1090—1, 217 ; —3 ; —4, 204).

Gwalior State, geology (730—1) (1197—37).

Gwalior system (730—1, 34) (1197—37, 58).

Gwegyo anticline, Burma, structure (1369—3) (372—4).

Gymnosperms, jurassic, from India (73a).\*

'Gypseous shales,' Cutch (1975—11, 76).

Gypsiferous series, Persia (148—49, 461) (1406—10, 26).

Gyrolite, W. India (805)

## H

Hæmatococcus, in salt pans, Bombay (288—4).

Haidinger's rings, in Burmese mica (310a).\*

Haimanta system (708—20, 49) (793—0, 9).

---

\* See Introductory Note—Supplementary List.

Haimanta system, crustacean tracks (?) in (1854—29, 250).

Hajigak limestone, Afghanistan (793—22, 24).

—————, fauna and age (1470—6, 103).

Halorites, occurrence in Trias, Baluchistan (1854—11).

Halorites limestone, Kumaon, fauna (486—27).

Hambergite, twinned crystal of —, Kashmir (243—1).

Hamirpur district, selenite in (1034—35).

Hammerstone, polished, from Singhbhum (423—12).\*

'Hamun,' Seistan, physical features (350—3, 715) (1173—5; —16) (1140—8, 220) (897—2, 277; —3) (806—13, Vol. II, 257) (32—4).\*

Hanamkonda, Deccan, geology and productions (1868—1; —2).

Hanging valleys, due to faulting, Seoni (1219—31, 128).

—————, glacial, Kumaon (713—2, 295).

—————, Sikkim (637—1, 21; —2, 711; —3, 295).

Hangrang pass, Spiti, geological section (1142—2).

Haramuk Mt., Kashmir, ascent of (1292—2, 47).

Harnai valley, Baluchistan, geology (1324—32) (708—26).

Harringtonite, W. India, analysis (786—6, 225).

Hasdo R., encroachment of —, on Son drainage area (577—47).

Hassan district, Mysore, geology (937—1) (1549—3; —6; —7; —9) (1450).

—————, wells in (1549—8).

Hatat series, Persian Gulf (1406—10, 8).

Hauerites beds, Kumaon (486—5, 544, 548).

Haughtonite, analysis (1405—89).

Haveli series, Bundelkhand (1854—17, 259)=Lower Bhander.

Hazara, geology (3—7) (1839—2, Vol. XXXVI, 31) (1975—17, 126; —24; —25; —32) (1197—81, 74) (1219—17).

---

\* See Introductory Note—Supplementary List.



Hazara, jurassic beds, correlation (1825—2, 587).

———, jurassic and cretaceous fossils from (423—8).\*

Hazara Jat, Afghanistan, topography (349—3) (1173—8).

Hazaribagh district, geology (1935—2, 70) (1159—7).

———, topography (1771—1).

———, wells in (1197—18).

Heat, effects of —, on condition of Earth (842—1).

Hedenstroemia beds, Spiti (1010—2, 201).

Heights, *see* Altitudes.

*Helieoprion*, in *Productus* limestone, Salt Range (1006—1).

Helmand basin, physical features (1173—5 ; —16) (897—2, 276 ; —3) (806—13, Vol. II, 257).

——— R., changes in course of (350—3, 715) (1465—2, 278) (1735, 678) (32—4 13).\*

Helmand series, Afghanistan (793—22, 25).

Hematite crystals, of corundiform habit (577—49).

Hematite-magnetite intergrowths, Salem (859—30, 112).

Henzada district, Burma, geology (1723—9).

Heinzai (Heinzé) basin, Tavoy, topography (1340—8).

Herat, fossil shells from (650—4).

Herat valley, geology (708—12).

Heterastridiæ, Karakoram (1338).

*Hexaprotodon*, remarks on genus (1117—14).

Himalaya, absence of lake basins in (561—16, Vol. II, 648).

———, age (1132) (512—6, 205) (1142—16, 81) (879—1 ; —2) (143—84 ; —85) (1324—86 ; —41, 477 ; —46, 176) (240, 258).

———, aspect of —, from plains (25).

———, from Simla (35—44).

---

\* *See* Introductory Note—Supplementary List.

Himalaya, atmospheric absorption in (1590).

———, attraction of —, on plumb-line (1426—1 ; —3) (239—2).

———, carboniferous and permian formations (486—12).

———, Devonian fauna (1470—6, 106).

———, discovery of organic remains in (827—9).

———, eastern termination of (1134—2, 184) (1883—5).\*

———, effects of denudation on elevation of (588—2).

———, effect of —, on magnetic needle (1574—1, 519).

———, fluctuations of glaciers in (859—61) (169—3).

———, geography and geology (1745) (240) (465—2).

———, geological history (1717—10) (1142—30).

———, geology of —, compared with Peninsular (708—2 ; —6 ; —7) (1197—59, vi).

———, gneissose granite, petrology and age (1142—13 ; —23 ; —26 ; —27 ; —33 ; —34) (1324—24).

———, isostatic compensation in (1426—3) (793—30, 144) (239—8) (1324—74 ; —75, 158).\*

———, jurassic, correlation (1712—15) (1308).

———, fauna (557—7) (1337—1 ; —2) (1825—1 ; —2) (1691).

———, liassic beds in (708—23).

———, limit of perpetual snow in, *see* Snow-line.

———, magnetic survey (1573—3).

———, mineral productions (35—42) (827—6) (651) (1159—1, 162).

———, Muschelkalk, fauna (486—4 ; —30).

———, sub-division (1010—3).

———, nieves penitentes in (1967—4).

———, origin (1198, lvi) (1324—36 ; —41, 459 ; —71) (239—7 ; —10\*) (588—4 ; —5).

---

\* *See* Introductory Note—Supplementary List.

Himalaya, orographical map of (1489—1).

———, orography (892—3; —4; —5, Vol. I, 73) (1576—9) (1561—1; —2; —4) (148—67) (669—25; —26) (1321—2; —4).

———, permian, distribution and fauna (1311—40, 653).

———, fauna (486—10; —18).

———, permo-carboniferous fauna (486—14).

———, physiography (1529—2, xi) (827—10, x) (849—5) (1777—2) (1578—12, Vol. II) (857—11, 102).

———, physiological conditions at high altitudes in (971—2).\*

———, pleistocene glaciation (1763—32, 236) (1109—26, 51) (1197—65, 127) (148—84) (486—8).

———, supposed absence of (1590, 394) (273) (147—20) (294—2) (669—22) (1197—46; —47) (1763—26) (879—1, 101; —3).

———, productions of (378).

———, relationship of —, to Indo-Gangetic plain (793—30).

———, soil and climate of (561—3).

———, structure (1197—10) (1173—10) (1321—2) (1324—75)\* (239—10).\*

———, support of (1324—74; —75, 247).\*

———, supposed volcano in (35—43) (194—1).

———, travels in (722—1; —2) (219—1).

———, Traumatocrinus limestone fauna (486—37).

———, Trias, correlation (708—3) (1237, 1278).

———, development and classification (1311—48, 124) (486—39).

———, occurrence and fauna (724).

———, triassic brachiopoda and lamellibranchs (133—1; —2).

———, cephalopoda (1236—1 to 3) (486—11) (1011).

———, fauna, composition (486—35).

———, Tropites limestone fauna (486—21; —23; —26).

---

\* See Introductory Note—Supplementary List.

- Himalaya, upper triassic and liassic fauna (486—32).  
 ———, volcanic origin (1839—2, Vol. XXXVI, 83).  
 ———, western termination (1197—58).  
 ——— (Central), fossils from (1678) (1547).  
 ———, geological sequence in (486—6).  
 ———, geology (1717—8) (708—6 ; —20 ; —24) (1197—65) (486—1, —2 ; —3 ; —5).  
 ———, physiography (1716—1) (1717—9 ; —15) (48) (162) (1090—1 ; —2 ; —4 ; —5).  
 ———, recession of water-parting in (486—7).  
 ———, topography (18) (619—2 to 6) (1090—7).  
 ———, *see also* Garhwal and Kumaon.  
 ——— (Eastern), low-level glaciation in (704—6).  
 ———, metamorphic rocks (211—5, 246).  
 ———, orography (1883—5).  
 ———, permo-carboniferous beds in (1134—2, 186) (486—20).  
 ———, physiography (1083—1 ; —4) (669—31) (857—13).  
 ———, Siwaliks at base of (1326—9).  
 ———, *see also* Assam, Sikkim, etc.  
 ——— (Lower or Outer), crystalline rocks (1219—4 ; —5 ; —6 ; —11).  
 ———, fossiliferous beds in (1219—1).  
 ———, geographical sub-divisions (849—2 ; —5, 778).  
 ———, geology (1197—3 ; —5 ; —60) (1324—5 ; —26) (1219 —3 ; —10 ; —15).  
 ———, physiography (851—2).  
 ——— (Western), altitudes in (1578—11, 510).  
 ———, geological notes on (619—1) (577—14) (827—10, xii) (1712—3 ; —7) (1326—41, 5) (561—15) (1197—81, 44).

Himalaya (Western), geological sections in (1712—5).

—————, magnetic survey (1572—3, 122 ; —4).

—————, map of glaciers in (1243—13).

—————, minerals from (1808—1).

—————, natural history (1529—1 ; —2) (8—1 ; —2).

—————, orography (881—5).

—————, permo-carboniferous fauna (486—42).

—————, physiographical notes on (684—1) (138) (399—1 ; —2 ; —3 ; —5) (1572—2) (1577—1) (1763—4).

—————, tertiary palm leaves from (570—51).

—————, topography (39) (1246) (1777—1 ; —3) (1576—1) (1939).

—————, valleys of (1321—1).

—————, vertebrate fossils from (1215—1, 27).

—————, *see also* Kashmir, Spiti, etc.

Himalayan axis, eastern prolongation of (1883—5).\*

—————, position (867—3, 52).

————— boundary fault (1197—5, 92 ; —60, 171) (1763—34, 94) (1219—10, 173 ; —15) (1324—41, 467 ; —75,\* 152).

—————, angle of dip (1025—7) (1219—34).\*

————— passes, description (827—1).

————— peaks, height of (337—2) (892—1) (852) (1078) (267—6) (1904—1 ; —3) (1574—2, Vol. II, 261) (1576—10) (1871—3) (1746) (1266) (486—36) (240, Pt. I).

—————, identification and nomenclature (239—5) (624—3, 625) (1956).

————— valleys, form of (39, Vol. I, 223).

—————, origin and development (1324—43 ; —46, 185 ; —70).

————— water-parting, position (849—7, 479).

—————, recession of (486—7).

---

\* *See* Introductory Note—Supplementary List.

Himalayan, zone, geology (240, 218).

———, series (1197—5, 21 ; —27, 14 ; —80, 6).

———, Kumaon (1324—4) (1694—2, 397 ; —4).

———, Naini Tal, structure (1219—12, 218).

———, Punjab (1197—81, 58).

Hindu Kush, geology and physical features (235—6, 493 ; —13, Vol. II, 233) (1091—2) (1986—5).

———, glaciers, former extension of (708—15, 25 ; —18).

———, orography (1173—15) (1561—4, 97) (904).

———, passage of (235—5).

Hindustan-Tibet road (197—2) (387) (1591).

Hingir stage (71—21, 111).

———, correlated with Kamthis (1198, 209).

Hinglaj stage (1854—19, 90 ; —20, 175).

Hingoli, Deccan, mammalian bones from (698).

Hippopotamus, fossil, from Burma (237—4).

———, Siwalik hills (562—2).

*Hippopotamus irrawadicus* Falc. and Caut., worn femur of— from Burma (1311—28).

*Hippotherium antilopinum* Falc. and Caut., skull of —, from Perim I. (1109—41).

Hippurite limestone, E. Persia (148—49, 457).

———, Seistan (1854—37, 221).

———, Sind (148—2, 163 ; —63, 33).

———, S.-E. Afghanistan (148—65).

Hircine (mineral resin), Burma (1405—48 ; —54).

Hislopite, Nagpur (786—2, 176 ; —3 ; —5) (859—9).

Hispar pass, crossing (351—1).

Hkampti Long, geology and topography (1926—2, 412) (1060) (1723—13, 245).\*

---

\* See Introductory Note—Supplementary List.

Hollandite, characters and composition (577—14, 76 ; —25 ; —32, 81).

———, crystallography and nomenclature (577—52).\*

Homotaxis, of Gondwana system (148—75) (1109—69).

———, of Kota-Maleri beds (148—54).

———, of Talchir glacial beds (1324—20).

Hooghly delta (900—6).

———, occurrence of drift wood in (1381—2).

——— river, alterations in channels of (1316—2).

———, currents and tides of (547).

———, low water channels in (544).

———, reports on (1089) (1059—1 ; —4) (1842).

———, silt, composition (1405—2).

———, quantity held in suspension (1405—59 ; —76).

———, temperature and salinity (1434—1).

———, topography in 18th century (1940).

Hormuz I., minerals from (365).

Hormuz salt formation (148—34, 42).

——— series (1406—10, 15).

Hornblende-andesite, Chamba, petrology (1142—16, 99).

Hornblende-glaucophane schist, Jade mines, Burma (88—1, 101).

Hornblendite, Gilgit, petrology (170, 473).

———, Mysore district, (937—7, 67).

Hornstone breccia, N.-E. Rajputana (830—6, 63).\*

Horse, ? pleistocene, Ceylon (1905—2).\*

Hoshiarpur, Punjab, ' Chos ' of (60—2) (1235).

Hot spring, Anaval (Devaki Unei), Surat (1736—1, 427).

---

\* See Introductory Note—Supplementary List.

- Hot spring, Anthoni, Chhindwara (1684—1 ; —4, 389) (1436—5, 7).
- , Anthoni Samoni, Hoshangabad (1684—1 ; —4, 389).
- , Arauli, Ratnagiri (796).
- , Arawad, Khandesh (148—22, 288).
- , Arjuna, Yeotmal (1158—8, 555).
- , Askoli (Chongo), Baltistan (669—4, 42) (722—2, 132).
- , Ataran R., Burma (1097—2, 154 ; —4, 235) (595—4, 276) (808—5, 22).
- , Atari, Orissa (994—3, 683) (71—43, 531).<sup>4</sup>
- , Ayer Panas, Malacca (185, 75).
- , Baiora (Buga), Hyderabad (1853—6, 397) (1158—8, 565).
- , Banassa, Tehri Garhwal (851—1, 142).
- , Banskela, Sambalpur (71—43, 591).
- , Barren I. (1070, 300) (1362—1, 217) (1263—3, 160) (71—46, 87 ; —41, 23 ; —66, 405) (845, 274) (1424—2, 53).
- , Bashisht, Kulu (1246, Vol. I, 186) (1168—3, 200) (763—2, 339) (265—2, 49) (219—2, 237).
- , Bellkapi, Hazaribagh (1941—2) (867—1, 372 ; —6, Vol. I, 27, Vol. II, 374) (1771—1, 4).
- , Beopertam, Sikkim (1616, 592).
- , Bharari (Janamkhund), Monghyr (1181, Vol. II, 199) (1624—2, 198).
- , Bhasra, Simla Hill States (1862—3).
- , Bhimband, Monghyr (1181, Vol. II, 198) (1117—33, 25) (1624—2, 199) (1587, 148).
- , Bhuga, Cuddapah (1294—43, 505).
- , Bisil (Behitsil), Baltistan (1846—4, Vol. II, 285).
- , Bisut, Afghanistan (1189—1, Vol. II, 357).
- , Changlang, Kashmir (1577—2, 118) (103—3, 152).
- , Changra, Cent. Tibet (1816, 220).
- , Changrizang, Bashahr (647—2, 141) (1159—1, 158).



- Hot spring, Chi Chu, Cent. Tibet (1464—2, 208).
- , Churka, Nepal (849—1, 514).
- , Chusan (Panamik), Kashmir (1246, Vol. I, 405) (1777—3, 407) (1577—2, 118) (103—3, 151).
- , Chutran, Baltistan (1846—4, Vol. II, 273) (669—4, 46).
- , Chutrang Chaka, Cent. Tibet (1243—10, 317).
- , Deoljhari, Orissa (71—43, 561).
- , Doari, Hazaribagh (1524, 863) (1771—1, 4).
- , Doza Khusti, Sind (1845—3, 265).
- , Dru, Afghanistan (529—2, 286).
- , Duchin (Dushkin), Baltistan (1846—4, Vol. II, 301).
- , Dung Chaka, Cent. Tibet (1243—10, 318).
- , Eng-bin-byin (Yebu-san), Tavoy (1097—4, 218).
- , Gangar, Udaipur (764—7, 53).
- , Garm-ab, Sind (1189—1, Vol. II, 148).
- , Bolan pass (709—4, 333).
- , Gaurikhund, Garhwal (35—42) (855, 311).
- , Gokra, Kashmir (294—1, 45) (795—1, 38) (815, 72).
- , Gondala, Godavari (1853—6, 396) (1158—8, 565) (1572—3, 103).
- , Hai-lung-tang, W. Yünnan (211—10, 204).
- , Hai-tang, W. Yünnan (211—10, 204).
- , Hoto, Braldu valley, Kashmir (669—4, 43).
- , Islamabad, Kashmir (8—2, 200).
- , Issar, Wakhan (1958—3, 216).
- , Jamnotri, Tehri Garhwal (619—3, 196 ; —4, 428 ; —5, 227) (851—1, 147) (18, 49, 69) (926—3, Vol. II, 89).
- , Jaori, Bashahr (337—4, 127) (1079, Vol. I, 198).
- , Jarum, Palamau (71—32, 19 ; —43, 648).

- Hot spring, Jashak, Makran (1704—2, 51).
- , Je-shui-tang, W. Yünnan (211—10, 205).
- , Jhariya (Jherwa) pani, Santal Parganas (1863—1, 228).
- , Kal-Drug (Kokner), Bombay (654—3).
- , Kalva, Kurnool (1294—52).
- , Kampa Dzong, Cent. Tibet (793—12, 137).
- , Kandhi, Sind (148—63, 114).
- , Kannea, Ceylon (35—71) (438—8, 43) (1759, Vol. II, 496).
- , Katkamsandi, Hazaribagh (557—1, 134) (1524, 863).
- , analysis (1436—8).
- , Kehsi Mansam (Ban-san) S. Shan States (569—1, 44).
- , Kesodih, Hazaribagh (1771—1, 4).
- , Khair, Yeotmal (1158—7, 115 ; —8, 556).
- , Khangma, Cent. Tibet (793—12, 137).
- , Khattan, Sibi (1794—1, 208).
- , Khawak, N. Afghanistan (1958—2, 413 ; —3, 272).
- , Khelat (Sitakhund), Kulu (399—3, 208) (1168—3, 200) (763—2, 339) (265—2, 38).
- , Khorkun, Baltistan (1846—4, Vol. II, 388).
- , Khornushu, Afghanistan (529—2, 287).
- , Kirta, Bolan Pass (987—46, 5).
- , Kissuker, Sind (1845—3, 265).
- , Knarung, Ladakh (1246, Vol. I, 416).
- , Kokraha (Thatha), Palamau (71—32, 20).
- , Kopili, Assam (1034—3, 202).
- , Kyai Kyaung, Karenni (1340—10, 447).<sup>3</sup>
- , Lakha, Baluchistan (1189—1, Vol. II, 126) (148—63, 75).

- Hot spring, Laki, Sind (235—17, 40) (1845—5, 342) (63, 231) (654—3) (148—63, 126).
- , Lanjabanda, Kurnool (1294—30).
- , Lashio, N. Shan States (1311—4, 111) (1034—45, 363).
- , Lasundara, Bombay (1979).
- , Laukyen (Laukchan) Tavoy (1097—2, 148) (1436—5).
- , Lausa, Kangra (1168—7).
- , Lingti, Yeotmal (1158—7, 113).
- , Lurgutha, Hazaribagh, analysis (1813).
- , Mahanandi, Kurnool (1294—52) (675, 11).
- , Manga (Mugger) Pir, Sind (284—3) (1845—5, 337) (63).
- , Manikarn, Kulu (1246, Vol. I, 177) (1363—1, 290 ; —2, 392) (1168—3, 197) (763—2, 339) (265—2, 77) (219—2, 181).
- , Mechi, Darjeeling (1666—3, 1039).
- , Mhurr, Cutch (1975—11, 265).
- , Michi, S.-E. Tibet (61—1, 340).
- , Minchu, Darjeeling (1073—3, 527).
- , analysis (1405—77).
- , Momai, Sikkim (867—3, 51 ; —6, Vol. II, 133, 375) (267—3, 568).
- , Mudanur, Hyderabad (1751—2, 31).
- , Mutrani, Sind (148—63, 86).
- , Myittha, Tavoy (1185—1, 17).
- , Naisam Chuja, Cent. Tibet (1243—10, 318).
- , Nambor, Assam (125—2, 132) (1197—9, 414) (1425).
- , Namon, N. Shan States (1034—45, 363).
- , Nan-tien, W. Yünnan (29—2, 88 ; —3, 182).
- , Nari Nai, Sind (148—63, 100).
- , Natmoo, Moulmein (1511—2).

- Hot spring, Natpa, Bashahr (647—2, 242).
- , Nunbil, Santal Parganas (1625—14, 25) (1863—1, 228).
- , Pai, Tavoy (1185—1, 18) (1699).
- , analysis (1820—1).
- , Palauk, Mergni (1139—2).
- , Palia (Wazirgarh), Garhwal (619—3, 185; —4, 414).
- , Pampur, Kashmir (881—3, Vol. I, 260) (1246, Vol. II, 243) (1846—4, Vol. II, 34).
- , Peting Chuja, Cent. Tibet (1243—10, 317).
- , Phug Sachu, Sikkim (1666—8, 1039) (173—16, 219).
- , Pindarkun, Hazaribagh, analysis (1813).
- , Pith (Ghazipur), Sind (1845—5, 345) (63, 231) (148—63, 111).
- , Pu Piao, W. Yünnan (211—19, 234).\*
- , Puga, Rupshu (1777—3, 164) (399—5, 146) (1578—18, 618).
- , Puklaz Sachu, Sikkim (1666—8, 1039) (173—16, 220).
- , Rajapur, Ratnagiri (1165).
- , Rajawar, Jammu (1846—4, Vol. II, 232).
- , Rajghir, Patna (1448—2) (1181, Vol. I, 256) (1625—4, 59; —6, 18).
- , Ralong Sachu, Sikkim (173—16, 220).
- , Sahasradhara, Dehra Dun (18, 43) (926—3, Vol. II, 21).
- , Salbaldi, Berar (148—22, 280).
- , Salem, Madras (1294—39, 129).
- , Sanda, W. Yünnan (29—2, 81; —3, 262).
- , Shushul, Kashmir (1246, Vol. I, 436).
- , Sidpur (Lau-lau-dah), Santal Parganas (1863—1, 227) (793—15).
- , Sitakhund, Chittagong (1957) (1034—36, 177) (363).

---

\* See Introductory Note—Supplementary list.

Hot spring, Sitakhund, Monghyr (7—1, 349) (39, Vol. II, 117) (1181, Vol. II, 196  
(867—6, Vol. I, 88) (1868—1, 230).

———, Sitaura, Patna (1625—6, 3).

———, Sneuron, Kashmir (1846—4, Vol. II, 273).

———, Sohna, Gurgaon (1099) (926—3, Vol. III, 337) (1666—7, 269).

———, Suni, Simla Hill States (647—2, 141).

———, analysis (1436—5, 17).

———, Talung, Sikkim (1920—1, 66).

———, Tantipara, Birbhum (1625—15, 14).

———, Tapoban, Garhwal (1245—1, 380).

———, Patna (1181, Vol. I, 253).

———, Taptapani, Ganjam (1657—3, 161).

———, Tatapani, Sarguja (71—32, 21 ; —43, 663).

———, Tatloi (Tapnai), Santal Parganas (1181, Vol. II, 200) (1625—15, 22)  
(1863—1, 228).

———, Tatlui (Tantolya), Manbhum (119).

———, Tirtapuri, Hundes (1245—1, 459).

———, Tiva (Jiva), Kangra (1363—1, 285) (1168—5 ; —6).

———, Tong, Sind (143—63, 171).

———, Tulsi Sham, Kathiawar (924—2, 36).

———, Tuwa (Tui), Bombay (1763—1, 427).

———, radioactivity (1690b).\*

———, Uch, Sibi (1845—3, 261).

———, Ulu Jelai, Pahang (1126).

———, Vizrabhai, Bombay (1736—1, 427).

———, Wujul, Hyderabad (1751—2, 30).

———, Yebu, Karenni (1340—9, 51).

---

\* See Introductory Note—Supplementary List.

Hot spring, Yeumtong, Sikkim (867—8, Vol. II, 116, 374).

—————, Yoja, Cent. Tibet (793—12, 136).

Hot springs, Ceylon (438—8, 42 ; —9).

—————, India, catalogue (1149) (1576—8) (1327—2).

—————, folk-lore connected with (71—71).

—————, influence on vegetation (71—43, 561 591).

—————, metamorphism due to (1142—38, 595).

—————, notes on (228—8).

—————, temperatures of (1294—39, 139).

—————, Karakash valley (1577—2, 112, 118) (1615—1, 97).

—————, Kashmir (1109—26, 54 ; —38, 41).

—————, Keng Tung, Burma (1729—1, 197).

—————, Kulu (263).

—————, Malay Peninsula (1294—3, 542 ; —9, 56) (480, 107, 109, 119) (177—1).

—————, Monghyr (1181, Vol. II, 196) (1624—2, 198) (1587).

—————, Oman, Arabia (1704—1) (1393).

—————, Pegu, Burma (1763—16, 352).

—————, Ratnagiri district (511) (596—14, 21) (1165—2).\*

—————, Santal Parganas (1863—1).

—————, Western India (1736—1, 427).

—————, analyses (662).

Hsipaw series, N. Shan States (424—3, 118)=Namyau series.

Hughes, T. W. H., obituary notice (859—66, 9).

Hughli delta and river, *see* Hooghly.

Hukawng valley, Upper Burma, geology (1311—8 ; —11, 34).

—————, topography (1385, 269) (709—4, 70) (939—2).

Hundes (Gnari Khorsum), fossil antelope skull from (1109—88).

——— rhinoceros from (561—18, Vol. I, 173).

——— vertebrates, described (1215—1).

———, discovery (827—9, 269) (1717—8, 306).

———, mesozoic group in (793—6, 195).

———, ossiferous beds, age of (708—2, 91) (1109—30).

———, topography (1245—1) (1716—1) (1243—7) (755) (1871—6) (1622).

Hunterite, Nagpur, composition (786—2, 178 ; —3, 19 ; —5).

Hunza, advance of glaciers in (196).

———, physical features (1896—5).

Hutar coal-field, fossil plants from (570—52).

———, geology (71—32).

Hwe Mawng beds, N. Shan States (1034—45, 92).

Hyacinth, Ceylon, characters and composition (788) (1834—1).

*Hyenodon indicus* Lyd., note on teeth of (1109—86).

Hybrid rock, Idar, petrology (793—26, 69).

Hyderabad (Deccan), altered infratrappean beds (741a—2).\*

———, bone cave near (1158—4).

———, fossil bones from (1158—3).

———, geology (35—47) (1853—6 ; —7, 198) (1158—7) (1868—2  
(1294—23 ; —24 ; —32 ; —51, 480) (987—8) (596—29).

———, intertrappean shells from (1158—5 ; —7, 108 ; —8, 548).

‘ Hyderabad beds ’ (1294—38, 160).

Hydrargillite, Palni Hills, analysis (1892—26 ; —27).

Hydraspide, fossil, from Bombay (697).

Hydrography, Bengal (1625—16).

———, Himalaya (1324—43 ; —70).

---

\* See Introductory Note—Supplementary List.

- Hydrography, Himalaya and W. Tibet (1576—9, 367).  
 ———, India and Tibet (1561—1, 13).  
 ———, Irrawaddy valley (677—1).  
 ———, Pamir (404, 97).  
 ———, Southern India (1534).  
 ———, Tibet (728—2, 197).  
 ———, eastern and western compared (1578—14).  
 ———, south-eastern (1871—17).  
 ———, Western Baluchistan (1854—1, 187).  
 ———, *see also* River system.

*Hyotherium*, description of jaw from Perim I. (1109—71).

*Hyperodapedon*, Indian specimen of (902—3, 141).

Hypersthene, in Charnockite (859—31, 141).

———, Vizagapatam Hill Tracts (1873, 14).

Hypersthene-granite, Jeypore, Vizagapatam, petrology (1872—2, 168).

Hypersthene-granulite, Ganjam, petrology (1657—3, 159).

Hypersthenization, of monoclinic pyroxene in Charnockite (1606a—1).\*

'Hypogene' series, Southern India (1294—38, 145).

Hypostilbite, characters and composition (786—1; —6, 224).

# I

Ibi Gamin (Mt.), Garhwal, description (1578—12, Vol. II, 347).

———, identification (1195a).\*

Ice, erosive power of (1324—1).

——, evidence of floating —, in Talchir period (71—38).

———, in Potwar, Punjab (1793—14).

---

\* See Introductory Note—Supplementary List.



Ice, formation of —, in running water (1324—48).

Ice Age, *see* Glacial Period.

Ice reservoirs and volcanoes, in Pamir (806—1, 310, 312).

Ichthyolite, from Kota, Deccan (101—2, 352).

Idocrase, Idar (793—18, 12).

Igneous rocks, Afghanistan (708—4, 47 ; —16, 102) (793—4, 115).

————, Baluchistan (1143, 295) (1854—1, 200).

————, Bundelkhand (1197—2, 75).

————, Central Tibet (793—11, 168 ; —12, 178).

————, Chamba (1142—16, 92).

————, Chitaldrug, Mysore (1549—1, 86).

————, Cutch (691—3, 291, 306).

————, Delhi system (830—6, 88).\*

————, Ganjam (1657—3, 158).

————, Hassan district, Mysore (1549—7, 58).

————, Jade mines, Burma (1311—23, 13) (88—1) (154—1 ; —3).

————, Kadur district, Mysore (1649—9, 38).

————, Kashmir valley (1839—2, 117).

————, Kirana hills, Punjab (830—2, 231).

————, Kumaon (1219—11).

————, Ladakh (1109—22, 40 ; —38, 111).

————, Mandi State, Kangra (1142—5).

————, Mikir hills, Assam (1657—2, 79).

————, Putao, Kachin hills (1723—13, 247).\*

————, Singapore (1603—12 ; —19).

————, Singhbhum (71—46, 136) (1134—1, 73).

---

\* *See* Introductory Note—Supplementary List. §

Igneous rocks, Southern India (1294—38, Vol. IX, 1).

—————, Sub-Himalaya (1197—5, 70).

—————, Thian Shan (666a, 282).\*

—————, Tochi valley (1657—1, 109).

—————, *see also* Dyke rocks, Eruptive rocks, etc.

Igneous series, Mysore (1649—5, 7).

Image stones, Indian, petrology (1142—20).

Implement, agate, from Godavari gravels (1975—2) (1326—47).

—————, jadeite, Burma (1490—3).

—————, magnetic iron ore (71—51).

—————, manganese ore (577—35).

—————, neolithic, Coorg (147—17).

—————, Jashpur, Chota Nagpur (1961—2).

—————, Pahang (1295—3, 132).

—————, stone, Assam (1375—4) (669—21).

—————, Burma (1763—11).

—————, Narbada valley (1197—28; —29).

—————, Singapore (1482—1).

—————, Singbhum (423—12).\*

Implements, agate, Kolaba district (1642).

—————, bronze, in India (1667—3).

—————, copper, from Agra, composition (1436—14, 436).

—————, United Provs. (1558).

—————, flint, Sukkur (1922—2) (148—45).

—————, limestone, Deccan (596—12, 247).

—————, Punjab (1763—31) (1734).

Implements, pigmy, Ceylon (779—3).

———, quartz, Ceylon (1605).

———, quartzite, Godavari (143—32).

———, stone, Andaman Is. (1763—3, 326).

———, Arakan (1543).

———, Assam (1690—2) (331—1).

———, two-shouldered type (423—7).\*

———, Assamese forms of —, distribution in Eastern Asia (211—14).

———, Banda district (331—1, 137) (1490—2).

———, Baroda (596—40, 86).

———, Bellary (596—9; —39, 206).

———, Bengal (71—1; —3).

———, Billa Surgam cave, Kurnool (596—30, 233).

———, Bundelkhand (1056) (1763—3).

———, Burma (1763—5; —7; —16, 355) (627) (1185—2) (1397—4).

———, of supposed upper Miocene age (1311—16; —20)  
(1324—50) (1733—1; —2).

———, Central Provinces (1732—1; —2) (148—12; —17) (783) (1946)  
(282) (1314—1) (1326—69, 79).

———, Ceylon (1368—2) (1557—1 to 3) (1414—1; —2) (779—1; —3).

———, materials used for (1368—3, 176).

———, Darjeeling district (1878).

———, Deccan (596—12, 241; —21, 544).

———, Gujarat (596—38).

———, India, distribution (71—23; —35; —43, 675; —65) (596—35)  
(1084).

———, Kharakpur, perforated (1763—22).

———, Kurnool district (987—5).

---

\* See Introductory Note—Supplementary List.

Implements, stone, Ladakh (614).

—————, Madras (1326—36) (596—3) (1608).

—————, in lateritic gravels (1326—40) (596—2; —8, 43; —17, 91; —20, 204).

—————, Museum, catalogue (596—48).

—————, Makran (148—52).

—————, Malay Peninsula, beliefs concerning (1603—10).

—————, Mirzapur district (987—50) (331—2).

—————, Orissa (71—25).

—————, Pahang (1731).

—————, Parasnath hill, Hazaribagh (71—33).

—————, Ranchi (1961—1).

—————, Santal Parganas (161—1; —2).

—————, Singhbhum district (71—4; —12; —22).

—————, Southern India, distribution (596—4; —32) (1582).

—————, United Provinces (1490—4).

—————, Vellore, S. India (331—1, 141).

—————, Yünnan (29—2, 410) (211—2; —8; —15).

Inclusions, acicular, in garnet (1021—2, 176) (859—16; —30, 127; —31, 161).

—————, in quartz (859—30, 119; —31, 138).

—————, in minerals of Aravalli rocks (1142—14).

—————, Himalayan granites (1142—13).

—————, of natural gas in bituminous salt, Kohat (1723—14).\*

—————, of pyroxene in felspar, Ceylon (1021—2, 177).

—————, of schist in gneissose granite (1142—4, 49; —15) (1219—17, 63).

Indan valley, Malay Peninsula, exploration and geology (1023).

*Indarctos salmontanus* Pilg., described (1406—17).

---

\* See Introductory Note—Supplementary List.

- India, ancient geography (1927) (1324—46).
- , antiquity of man in (561—14, 383).
- , artesian conditions in (1197—61) (1854—2).
- , coal mining industry in (801) (718—1 ; —2) (1137) (1230—1).
- , *see also* Collieries.
- , copper age in (1667—3) (1558) (1287—2).\*
- , deflection of plumb-line in (1426—3 ; —6) (1471) (239—4) (588—3).
- , descriptive accounts, XVI century (621) (589) (1538) (1831).
- , XVII century (744) (1747).
- , XVIII century (1387—1).
- , XIX century (1829—1, Vol. I) (749) (803) (926—1 to 3) (855) (1574—2, Vol. III).
- , determination of altitudes in (1574—2, Vol. II, 93) (1578—11).
- , early use of iron in (696) (1287).
- , earth-eating habit in (869).
- , economic productions (1224) (17) (1827—1) (1529—5) (69—8) (1903—1 ; —2 ; —5).
- , eocene (nummulitic) fauna (418).
- , erosion by rivers in (1577—3).
- , fossil mammalian fauna (1109—4 ; —18, 48) (1406—13, 198 ; —16, 280).
- , fossil vertebrate fauna (1215—2) (1109—9 ; —24 ; —39 ; —75).
- , fossiliferous formations, distribution (1859—6).
- , freshwater fish of —, geological relations (1359).
- , geography (1473—3) (113) (1489—2).
- , evolution (1324—46).
- , of N.-E. frontier (782) (857—13).
- , of N.-W. frontier (1173—8 ; —12 ; —14) (857—8).

---

\* *See* Introductory Note—Supplementary List.

- India, geological maps (669—1 ; —3) (700—1 ; —2) (71—34) (1197—49) (1324—42).
- , geological survey, annual reports, 1848-1849 (1117—33): 1858-1872 (1326—19 ; —22 ; —27 ; —30 ; —31 ; —35 ; —39 ; —41 ; —43 ; —44 ; —54 ; —60 ; —66 ; —71 ; —73): 1873 (1197—30): 1874-1875 (1326—76 ; —77): 1876-1886 (1197—44 ; —48 ; —50 ; —54 ; —59 ; —63 ; —66 ; —68 ; —69 ; —75 ; —80): 1887-1893 (987—39 ; —40 ; —44 ; —46 ; —48 ; —49 ; —51): 1894-1895 (708—27 ; —29): 1896 (1324—52): 1898-1902 (708—31 ; —32 ; —33 ; —34): 1903-1908 (859—38 ; —51 ; —56 ; —60 ; —66 ; —71): 1909 (1034—39): 1910-1913 (793—24 ; —26 ; —28 ; —31): 1914 (1219—31): 1915-1919 (793—35 ; —37 ; —39 ; —42 ; —45).\*
- , progress of (1326—16) (35—48 ; —51) (1964—1) (148—64).
- , work of (1480—3).
- , geological terminology (864a).
- , geology of —, bibliography (1324—29a) (1034—46).\*
- , manual (1198) (1324—41) (1863a—2).\*
- , summary (178) (699—2) (512—3) (460) (987—36) (1456) (1025—6) (880) (859—49) (1854—65).
- , and ethnology (35—49).
- , gondite series in —, distribution (577—37, 19).
- , industrial arts (132).
- resources (131).
- , irrigation in (1942) (109).
- , isostasy in (394).
- , jurassic gymnosperms from (73a).\*
- , jurassic system, distribution (1859—5).
- magnetic survey of —, scientific results (1574—1 ; —2) (1578—6).
- , mineral production, 1904 (859—53 ; —55): 1905 (859—57) (1034—31): 1906-1908 (859—62 ; —67 ; —72): 1909 (1034—40): 1910-1912 (793—24 ; —27 ; —29): 1914 (793—33) 1915-1919 (793—36 ; —38 ; —40 ; —43 ; —46).\*

India, mineral production, quinquennial review (859—50) (861) (862).

——, mineral resources, development (801) (71—54) (1376) (1637) (859—84, 21 ; —77).

——, distribution (148—42) (71—45 ; —62) (987—43) (1679—11) (1531) (859—65 ; —69) (1034—46, Pt. II).\*

——, early accounts of (71—59).

——, mining education in (1491).

——, mining industry (555—9) (832) (1034—44) (1762).

——, pendulum operations in (1871—4) (1058).

——, permo-carboniferous system correlated with Russian (1586).

——, permo-triassic boundary in (486—15).

——, physiography (228—16 ; —18) (1578—12) (1561—1) (632) (147—22) (225—1) (173—13) (857—11).

——, history of research (1173—4, 2nd Edn., 341).

——, seismic instability in —, causes of (462—2).

——, steel manufacture, modern (1150a)\* (1810a).\*

——, stone age in (147—16) (1084).

——, stone implements, distribution (71—35 ; —43, 675 ; —65).

——, stratigraphical sequence (148—76 ; —81) (859—58, 41 ; —78).

——, temperature of springs, wells and rivers (1294—39).

——, tertiary freshwater deposits, classification (1406—13).

——, variations in force of gravity (538—1) (239—6) (859—74).

——, volcanoes (228—10) (71—71).

——, water analysis in (1147) (1301—2).

——, water power in (484a).\*

——, water supply (1507—3) (1679—12) (440).

——, zoogeographical observations in (1003).

India, (Central), *see* Central India.

---

\* *See* Introductory Note—Supplementary List.

India, (Northern), ancient river system (1406—24)\* (1369—14).\*

———, climate and resources (362).

———, topography (39) (1342).

———, well-sinking in (1715—3).

———, *see also* Punjab, Sind, etc.

India, (Southern), abnormal floods in (1714a—1; —2).\*

———, absence of glaciation (1294—36; —40) (148—43).

———, cretaceous beds (964—1; —2; —4).

———, correlation (598—1) (1712—2; —6) (1008—2).

———, brachiopoda, etc. (1712—24).

———, cephalopoda (147—6) (1712—4; —12).

———, fauna (598—2) (1008—1) (1682).

———, fossils (964—3; —5) (1117—23).

———, gastropoda (1712—11; —13).

———, pelecypoda (1712—21).

———, Dharwar system in (596—34).

———, fossiliferous rocks (894—12).

———, geological history (1652—21).

———, survey (596—23).

———, geology (1666—2) (1294—38) (1278).

———, magnetic rocks in (207—3).

———, metamorphic rocks (1062—1; —2) (23) (110—2) (272—13).

———, mineralogy in (272—5)

———, orography (1629—3).

———, physiography (188—3).

———, red soil of (659).



India, (Southern), river system (1534) (1173—6 ; —11).

—————, rocks and minerals (186—1) (272—17) (396).

—————, stone implements, distribution (596—4 ; —32) (1582).

—————, upper Gondwana in (596—13).

—————, *see also* Indian Peninsula, Madras Mysore, etc.

India, (Western), artesian wells in (708—32, 29).

—————, geology (288—20) (148—21 ; —22 ; —37) (173—5).

—————, physiography (228—5).

—————, tertiary fish teeth from (423—11).\*

—————, topography (1420—2) (1788—2).

—————, traps and intertrappean beds (148—16).

—————, *see also* Bombay, Cutch, etc.

Indian arc, curvature of (1426—2 ; —4).

——— desert, composition of sand (1034—28, 38).

———, lost river of (1131—2, 299) (1323—1 ; —2) (1324—19, 332).

———, physical features (235—10) (623—2 ; —3) (148—48).

——— micas, percussion figures in (1872—1).

——— Ocean, atolls in (634—8) (628).

———, coral formations (179) (634—1 ; —3 ; —7).

———, deep sea deposits (1275—1 ; —2).

———, soundings in (14—4, 5) (634—6).

———, *see also* Laccadive and Maldivo Is.

Indian Peninsula, Archæan and Purana groups of —, classification (859—78).

———, geological history (1025—5) (1652—21).

——— sequence in (555—17).

———, survey (596—23).

---

\* *See* Introductory Note—Supplementary List.

Indian Peninsula, geology (260—1) (353) (309, 340).

————— compared with Himalayan (708—2).

—————, magnetic survey (1572—3).

—————, physiography (271) (1256).

————— and productions (834—2).

—————, pleistocene earth movements in (1854—16).

—————, river system (1534).

—————, rocks and minerals of (1294—20) (555—17).

—————, topography (1473—4) (1573—4) (1522).

Indian Surveys, memoir of (1173—4).

Indianite (Anorthite), characters and composition (448—3, 285) (1038—3) (1632—1, 391 ; —2) (1021—2, 184).

Indicolite, in pegmatite, Hazaribagh (859—37, 51).

'Indobrahm R.,' course of (1369—14)\*.

*Indoceras baluchianense* Noetl., ontogeny and development (1311—52 ; —53).

Indo-China, orography (1739, Vol. I, 669).

Indo-Gangetic alluvium, average density (1324—77).

—————, conditions of deposition (1087—2) (1881—1, 320) (1324—36, 70 ; —41, 427).

—————, conditions underlying —, as affecting isostatic compensation (793—32).

—————, effects on plumb-line (1324—73).

————— plain, artesian conditions in (1197—61, 223 ; —70) (1324—13).

—————, irrigation from wells in (326).

—————, not an old sea-basin (148—69).

—————relies of ice age in (1034—43).

————— trough, *see* Gangetic trough.

Indo-oceanic continent, evidence of former existence (147—18).

---

\* *See* Introductory Note—Supplementary List.

Indo-oceanic continent, *see* Gondwanaland.

Indo-Pacific region, geographical conditions in cretaceous period (1008—3, 73).

Indravati valley, Bastar, topography (857—2, 374).

Indus delta, ancient geography (235—11, 581 ; —12) (1421) (1507—2, 120).

———, description (284—1) (1801—2).

Indus R., changes in course of (1421) (1463—4, 185).

———, discharge (235—2).

———, eastern branch, *see* Eastern Narra.

———, erosion and deposition by (1857) (836).

———, flood, November 1826 (235—11, 553 ; —13, Vol. III, 315) : June 1841 (3—8) (561—7) : August 10, 1858 (1717—12) (93) (817) (1243—2) : August 1861 (909).

———, floods, causes of (399—5, 99) (502—3, 414).

———, wave translation theory of (1316—1) (1426—8).

———, geology of banks (235—6).

———, lower course of (235—9 ; —13, Vol. III, 193) (1145—3 ; —4) (1958—1) (316—3) (284—4) (804).

———, quantity of oil in suspension (1801—1).

———, source of (235—13, Vol. II, 220) (399—5, 84) (755) (806—9, Vol. II, 207).

———, sub-marine canon at mouth of (1781).

Indus valley, geological section below Attock (1859—15).

———, middle, exploration of (1871—5).

———, upper, alluvial and lacustrine deposits (502—1 ; —2).

———, geology (1712—5, 129).

———, glaciers (669—3).

———, physiography (502—3, 264) (1321—1, 53).

———, *see also* Ladakh.

Infra-Blaini series (1197—5, 33) = Simla slates.

———, correlated with Babeh series (1712—5, 141).

Infra-Blaini series, correlated with Haimantas (708—20, 52).

—————, Panjal Slates (1109—38, 211).

Infra-Krol series (1197—5, 27) (1324—23, 135).

————— correlated with lower Zanskar system (1109—38, 199).

Infra plutonic zone, in crust of Earth (577—43; — 48).

Intratrappean grits, Cutch (143—1, 233).

————— series, *see* Lameta series.

Infr-Trias, Hazara (1860, 335) (1975—24, 124) (1219—17, 17).

Inlier, of Pegu beds, Ondwe, Burma (1369—8).

Insects, in Burmese amber (331a—1 to 9).\*

—————, in intertrappean beds, Nagpur (1272).

Insolation, in Rajputana desert (1034—28, 10).

Intergrowths, of augite and felspar, Bombay basalt (1142—7, 45).

—————, Dalhousie basalt (1142—10, 179).

—————, Rajmahal trap (1142—21, 104).

—————, of garnet with felspar and quartz (859—17, 27).

—————, of hematite and magnetite, Salem (859—30, 112).

—————, of mica (859—37, 22).

—————, of rhombic and monoclinic pyroxenes (859—18, 29).

Intertrappean beds (288—13, 267) (148—16, 148; — 37, 92).

—————, Bombay (320—1) (288—8, 162, 174) (228—11, 196; — 21)  
(1053—1), (1975—1, 193, 217; — 6).

—————, fauna (1353—2) (1712—17) (697).

—————, Central Provinces (1326—69, 77).

—————, Chhindwara (577a, 101).\*

—————, Cutch (1975—11, 58).

\* *See* Introductory Note—Supplementary List.

Intertrappean beds, Deccan (1158—5 ; —6, 338 ; —7, 108 ; —8, 548, 569) (1294—38, 219) (596—12, 192).

———, Gawilgarh hills (1853—1).

———, Jubbulpore (1684—3).

———, Kathiawar (569—6, 99).

———, Malwa (1158—12).

———, Nagpur (843, Vol. XI, 356) (844) (842—9) (148—33, 318).

———, cypridæ from (955—1).

———, fauna (844, 166) (32—5).\*

———, compared with Laramie fauna U. S. A. (1290).

———, insects from (1272).

———, Nerbada valley (1199—3, 199) (173—5, 63).

———, Rajahmundry (540—2) (844, 161) (987—18, 232).

———, fauna (844, 176).

———, Rajmahal hills, *see* Rajmahal series.

———, Saugor (1687—4 ; —5) (1684—7) (288—17, 618).

———, fossil palm tree from (1303—2).

———, Wardha valley (148—21, 64).

Intertrappean sandstone, Aurangabad (934).

Intrusive character, of Charnockite (859—31, 224).

———, of gneissose granite (1142—8, 140) (1324—22, 159 ; —27, 149) (1219—17, 61).

Intrusive rocks, Bellary district (596—31, 107 ; —39, 165).

———, Burma (1763—16, 330).

———, Ceylon (356—1, 598).

———, Cutch (1975—11, 64).

———, East Coastal area (596—17, 42).

---

\* *See* Introductory Note—Supplementary List.

- Intrusive rocks, North Arcot (596—20, 194).  
 ————, N. Shan States (1034—45, 59).  
 ————, S. Malabar (1025—1, 215).  
 ————, *see also* Dyke rocks, Igneous rocks, etc.
- Inundation, *see* Flood.
- Iodine, in thermal spring, Kangra (1168—4).
- Irlakonda quartzite, Cuddapah series (987—7, 255).
- Iron, early use of —, in India (696) (1287).  
 —, in Basti aerolite, analysis (1184—6, 155).  
 Iron industry, ancient, of Ceylon (732).  
 ————, recent developments in India (1810a).\*  
 —, native, in Deccan basalt (951).  
 — ore, Ceylon (514—23).  
 ————, nodules in laterite (657).  
 ————, Mysore (1838—5 ; — 6).\*  
 ————, Twinng, N. Shan States (211—18).\*  
 — peroxide, pseudomorphs after pyrites (1866—2).  
 —, pillar, Delhi, history (1667—1) (1850).  
 ————, Dhar (1667—2).  
 'Iron clay' formation (1853—6, 302) = Laterite.  
 ————, Deccan (596—12, 200).
- Ironstone, Ceylon, analysis (1220).  
 ————shales, Damuda series (148—7, 74).
- Irrawaddy alluvium (1763—16, 227) (1019—2).  
 ————, compared with Gangetic (1763—9).  
 ———— basin, geological structure (372—13).\*

---

\* See Introductory Note—Supplementary List.

Irrawaddy delta, description (222—14, 269) (1987—3, 80) (1710) (677—6).

———, floods in (1551a).\*

———, growth of (1087—1).

———river, changes in course (211—10, 178).

———, description (1738—1) (386—3) (709—4, 146) (1987—4) (83—1; —3) (255—2).

———, discharge of (1117—34) (1087—1) (400) (677—2) (740—1) (1551a).\*

———, native map of (222—6; —7).

———, petrifying quality of water (22—2, 34) (226—2).

———, sources (35—58) (995—4) (1987—5) (29—1; —2, 178) (1012, 246) (1554) (819, 368) (1871—16; —18; —20, 172; —23) (1523—1; —3) (497—2, 244) (61—1, 339).

———, supposed connection with Tsung-po (995—1; —4) (1020) (359—2) (677—2; —3) (1871—13).

———, survey of (677—1).

———, upper course of (1060) (497—1) (1134—7) (1984, 168) (1439).

Irrawaddy system (1763—16, 247) (1311—22, 76; —36, 15; —37, 10) (712, 60) (1369—11, 29).

———, classification and correlation (1723—5, 267; —6, 277) (1855 130).

———, fossils from —, at Rangoon (1406—5).

———, marine beds of —, *see* Akaukaunga stage.

Irrigation, in United Provinces (899a)\* (1238—2).\*

Iskardo, Kashmir, *see* Skardo.

Island, appearance of new —, off Arakan coast (1535) (1934—1) (1159—60) (797).

———, off Coromandel coast (1405—26).

Islands, Indian Ocean, survey of (634—6; —8).

———, *see also* Laccadive, Maldivé Is., etc.

———, Persian Gulf, geology (1406—10, 112).

---

\* *See* Introductory Note—Supplementary List.

Islands, *see also* Bombay Islands.

Isomorphism, of barytes with anhydrite (1675—1).

Isostasy, relationship with earthquakes and vulcanicity (577—48).

———, theory of —, in connection with mountain ranges in India (859—79, 351).

———, in India (394).

Isostatic compensation, application of principle of —, to conditions underlying Indo-Gangetic alluvium (793—32).

———, in Himalaya (1426—3) (793—30, 144) (239—8) (1324—74; —75)\* (431a).\*

———, in Pamir (1324—76).\*

Itacolumite, causes of flexibility (1404) (1916—1; —2) (531) (1251—1) (471) (681) (1683) (1265) (1324—30) (1483) (1409).

———, description (561 6) (1365).

———, mode of occurrence at Kalia, Jhind (1197—31).

———, structure (1380).

Itekuri coal-field, geology (888—8).

## J

Jabalpur district, *see* Jabulpore.

Jabalpur series, U. Gondwana (1326—69, 75) (1197—26, 142) !

———, flora (570—8, 125; —16; —42, 189).

———, occurrence of *Glossopteris* in (570—19, 140).

Jabi stage, Salt Range (1859—26, 220, 241).

Jadeite, compared with nephrite (115—1).

——— tremolite (413—1).

———, composition (413—3) (1214—1) (1013—1) (1922) (566) (154—8, 274).

———, origin (464) (115—1) (154—3, 277).

Jaintia Hills, Assam, geology (669—12; —14) (1034—3) (708—34, 25).



Jaipurite (Syepoorite), analysis (1221—1) (1518—2) (1159—24).

—————, nomenclature (148—10).

'Jaisalmer limestone' (148—50, 19) (1324—18, 159)=Chari series, Cutch.

Jaisalmer State, discovery of ammonites in (905—3).

—————, geology (148—50, 14) (1324—18).

—————, topography (1879).

Jalalabad valley, Afghanistan, topography (1125).

Jalor granite, Rajputana (1034—28, 24, 91).

Jammalamadugu stage, Kurnool series (987—6, 8; —7, 67).

Jammu, geology of coal-fields (1034—9) (1640—3).

—————, physical features and geology (502—3; —4).

—————, *Stegodon ganesa* in (1863a—1).\*

—————, Subathu series in (1197—5, 89).

—————, Sub-Himalayan system in (1197—41).

Jamnotri, description (619—3, 196; —4, 397; —5, 227) (851—1, 147) (18, 48)  
(35—45, Vol. XXIV, 26).

Jangaon sandstone, U. Gondwana, flora (570—15, 190).

Japan, occurrence of Siwalik beds in (1109—42, 159).

Jargon, Ceylon, characters and composition (996—2) (572) (788) (330—2).

Jargonium, discovery (1677—1; —2) (317—1).

Jashpur State, neolithic celt from (1961—2).

—————, topography (410—1, 12).

Jasper, Bijawar system, petrology (1325, 66).

—————, Indian, fossil algæ in (1565).

—————, specimen of —, from Khasi Hills (35—59).

Jaunsar-Bawar, geology (557—14) (1324—5) (1219—3, 27).

Jaunsar system (1324—26, 131, 143).

---

\* See Introductory Note—Supplementary List.

Javanhalli series, Mysore (1915—9, 2) (1549—1, 67).

Jawala Mukhi, Kangra, burning well at (1246, Vol. I, 69) (881—1, 187; —3, Vol. I, 85) (647—2, 130).

Jessore district, topography (639).

Jeypore Zemindary, Vizagapatam, geology (1872—2).

—————, topography (1843).

Jhakmari stage, Sind (708—33, 25)=U. cretaceous.

Jhalawan, Baluchistan, geology (345—3) (1854—36).

Jhansi district, selenite in (1632—2).

Jharia coal-field, calcareous concretions in coal from (1787—8).

—————, correlation of coal outcrops in (1640—11).\*

—————, geology (888—1) (1887—1).

Jhelum district, geology (19, 291).

—————, topography and resources (183—1).

Jhelum river, description (604).

—————, floods in (1041, 205).

—————, source of (1041, 18).

Jhelum valley, alluvial fans in (669—1).

—————, glaciation of (1704—4) (1324—66).

Jhilmilli coal-field, geology (888—29, 205).

Jhiri shales, U. Vindhyan (1159—3, 27, 65).

Jobat beds, Narbada valley (148—22, 314) (173—5, 16).

Jodhpur, pseudo-fucoids in Vindhyan sandstone (1854—29, 248).

‘Jodhpur sandstones’ (148—50, 18).

—————, chert-bearing limestone in (730—5, 300).

Jodhpur State, *see* Marwar.

Jogimaradi trap, Mysore, character and origin (1652—18, 21).

Johar, exotic blocks (708—24, 22; —35) (486—6, 375) (1010—6).

———, fauna (486—9; —18, 62; —32).

———, geology (708—20, 131) (486—13).

———, lower triassic cephalopoda (1011).

Johilla coal-field, geology (888—29, 169).

Johore, Malay Peninsula, topography and geology (1294—4) (1085—7).

Jointing, columnar, in basalt, N. Shan States (1034—34, 41).

———, in Deccan trap (57) (148—16, 292).

———, in Rajmahal trap (71—26, 214).

———, in granite, Bellary (596—39, 56).

———, in metamorphic rocks, S. India (988, 306).

———, in sandstone, Jubbulpore (1197—23).

———, spheroidal, in metamorphic rocks (71—37).

Jomokangar, Mt., identification (624—5) (328).

Jubbulpore district, cranium of *Boselaphus namadicus* from (1406—8).

———, Dinosaurian remains from (1190a—1; —2).\*

———, flint and stone implements from (1732—1; —2) (148—12) (1314—1).

———, fossil bones from (107) (1436—15) (1634—2) (561—16, Vol. I, 418).

———, analysis (1436—12).

———, geology (7—2, 46; —4) (1326—71, 9).

———, intertrappean mollusca from (1684—3).

———, minerals (577—33).

Jubbulpore series, *see* Jabalpur.

Juddite, composition and characters (577—28, 211; —32, 159).

Jullunder Doab, geology and topography (1363—1; —2).

---

\* *See* Introductory Note—Supplementary List.

Jumna alluvium, fossil bones from (242—1) (1436—17 ; —22) (1656—1 ; —2) (442—2 ; —3) (561—14, 379) (1109—35, 33) (1324—11).

—————, fossil mollusca from (1109—36, 106).

—————, permeability (65—5) (1197—71).

—————, sections in (442—1).

———— canals (292—13 ; —14 ; —16).

———— river, description (498) (87).

————, floods in —, 1861-1865 (1630).

————, source of —, *see* Jamnotri.

Jungel (Red shale) series, Son valley (1325, 7).

Junk-Ceylon I., coal in (251) (727) (1346—2).

Jurassic, Aden hinterland (1159—4, 281) (1077, 318).

—————, fauna (1296) (1787—6).

————, Afghanistan (708—13, 248) (793—22, 30).

————, Baluchistan (1854—36, 191).

—————, fauna (1311—20).

————, Central Tibet (1311—46) (793—11, 162 ; —12, 145).

————, Cutch (691—3, 292) (148—15 ; —37, 87) (1975—8, 53 ; —11, 49).

—————, ammonite fauna, distribution (1859—1).

—————, brachiopoda (992—1).

—————, cephalopoda (1859—4).

—————, corals (704—2).

—————, correlation (1825—2, 584).

—————, echinoidea (704—1).

—————, flora (691—3, 327) (570—6 ; —7 ; —8, 29 ; —30).

—————, list of genera and species (570—4).

—————, fossils from (1736—2).

—————, Trigoninae (992—2).

- Jurassic, Godavari, flora (570—15).
- , Hazara (1975—24, 125) (1219—17, 29).
- , correlation (1825—2, 587).
- , fauna (1860, 340).
- , Himalaya, *see* Spiti Shales.
- , India, distribution (1859—5).
- , gymnosperms from (73a).\*
- , Jaisalmer (148—50, 19) (1324—18, 158).
- , Jammu (1197—41, 53) (1034—9, 63).
- , Karakash valley (1725, 461).
- , Kashmir, fossils from (550) (431—3, 37).
- , Kathiawar (569—8, 78).
- , flora (570—41).
- , Mombasa, Indian forms of ammonite from (121—3).
- , Nepal, fossils from (859—70) (1470—3).
- , Pamir (793—34, 307).
- , Punjab (1975—12, 62 ; —14, 71 ; —21, 360).
- , Salt Range (591—5, 269) (1975—18, 101).
- , correlation (1825—2, 587).
- , relation with cretaceous (1006—3).
- , Shan States (1034—45, 303).
- , brachiopoda (227—1 ; —2).\*
- , Sheikh Budin (1839—2, Vol. XXXVI, 15).
- , fauna (479—2, 223).
- , flora (570—41, 64).
- , Singapore, fossils from (1295—8).

---

\* *See* Introductory Note—Supplementary List.

- Jurassic, Trans-Indus Salt Range (1975—28, 241).  
 ———, *see also* Jabalpur series, Rajmahal series, etc.  
 Jura-Trias sequence, correlation of Gondwanas with (570—10).  
 Jutana stage, Salt Range (1311—15, 79)=Magnesian sandstone.  
 Jutogh, Simla, geology (1324—21, 148).  
 Jutur (Jootoor) trap, Cuddapah, petrology (1025—4, 259).  
 Juvavites beds, Spiti (1010—2, 220).

## K

- K 2 (Mt. Godwin-Austen), expedition to (1395).  
 —————, height of (1426—5) (351—3) (1871—21; —22).  
 —————, identification (502—3, 370) (669—29; —30).  
 Kabat anticline, Myingyan, structure (1369—1).  
 Kabru Mt., Sikkim, ascent of (687—1).  
 Kabul R. valley, topography (1125) (1173—15).  
 Kachh, *see* Cutch.  
 Kachin hills, geology (211—10).  
 —————, physical features (29—2, 68).  
 —————, topography (1554) (1871—20) (1439).  
 Kadur district, Mysore, geology (1652—3, 149; —18, 42) (1915—6) (1649—9; (1549—6; —11) (937—8).<sup>\*</sup>  
 Kafiristan, physical features (1463—2) (1497).  
 Kailassa gneiss, Vizagapatam (987—33, 150).  
 Kaimur range, geology (74) (1935—2).  
 Kaimur series (1326—12, 251) (1159—3, 49) (1854—17, 259).  
 —————, Bundelkhand (1197—2, 57).

---

<sup>\*</sup> *See* Introductory Note—Supplementary List.

Kalabagh, Punjab, description (1234—1).

—————, geology (1975—28, 246).

Kalabagh beds (1859—28, 195, 241).

Kaladgi system (596—12, 70).

—————, Ratnagiri (596—14, 30 ; —15, 43).

Kalahandi State, geology (1872—3).

Kalat, Baluchistan, geology (354—1 to 4) (1854—36).

—————, topography (1189—1, Vol. II ; —2, 281).

Kalawala pass, Siwalik fossils in (1324—7).

Kaliana, Rajputana, flexible sandstone at (1197—31).

Kalu series, Afghanistan (793—22, 23).

Kama clays, Burma (1763—6, 80 ; —16, 273).

—————, age and fauna (1723—5, 265 ; —6, 273).

—————, correlated with Hinglaj series (1855, 130).

Kambakam Drug plateau, Madras, description (1662) (1242).

Kamet Mt., Garhwal, identification (1195a).\*

Kamlial beds, Punjab (1406—28).\*

—————, geological horizon (1406d—1, 154).

Kampa system, Cent. Tibet (793—12, 161).

Kampti, *see* Hkampti.

Kamrup, Assam, topography (248).

Kamthi series (843, Vol. XI, 352, 369) (148—20 ; —33, 305, 325) (1326—69, 73).

—————, correlated with Panchets (1326—55, 100).

—————, fossil plants from (1158—10) (230—2).

—————, Beddadanol coal-field (987—10, 114).

—————, Chhatisgarh basin (987—32, 195).

---

\* *See* Introductory Note—Supplementary List.

Kamthi series, Godavari basin (148—27; —29; —30) (888—22, 22) (987—8, 48  
—18, 208; —23, 250).

—————, Raigarh-Hingir coal-field (987—30, 124).

—————, Singareni coal-field (987—9, 68).

—————, Wardha valley coal-fields (888—20, 66).

Kanawar (Kanaur), discovery of fossils in (650—1).

—————, permo-carboniferous fauna (486—42).

—————, topography and geology (900—4; —5) (647—2) (926—2, Vol. I,  
272; —3, Vol. II, 178) (401—1).

Kanbauk, Burma, description of wolframite mine at (709a—3).

Kangra district, former extension of glaciers in (1763—20).

—————, geology and topography (1846—4, Vol. I 75) (1363—1; —2)  
(1572—5, 288) (763—1) (1231—1; —2).

Kanhan R. valley, Central Provinces, geology (424—4).

Kanjamalai, Salem, geology (708—28, 87).

'Kankar', character and composition (764—2, 267) (1294—38, 258) (484—1)  
(1405—66).

—————, fossiliferous, Patiala (679).

—————, geology (1305—1) (988, 342).

—————, occurrence, in Jumna R. (1656—1).

—————, in marine clay, Bombay (288—8, 205).

—————, in Rajputana desert (1034—28, 12, 41).

—————, origin (7—2, 47) (35—60) (764—3, 732) (956—3) (260—1, 17) (557—8,  
475) (321—2, 91) (1666—3, 328) (272—15) (1294—30; —50) (3—2)  
(288—24) (1881—1, 321).

—————, shelly, Benares (1624—1).

Kantkot sandstone, Cutch (1859—4, introd.).

Kao-liang system, Yünnan (211—19, 218).\*

—————, correlated with Chaung Magyi series (1094a, 209).\*

---

\* See Introductory Note—Supplementary List.



Kaolin, Fed. Malay States, origin (1603—39).\*

Kapra sandstone, Godavari (987—23, 231).

Karakash valley, brine pits in (814) (815, 88).

—————, crystalline rocks (1712—27).

—————, jurassic beds (1725, 461).

—————, topography (795—1).

Karakoram pass, description (1777—1 ; —3, 408).

—————, permian and permo-carboniferous beds (1725, 457) (682a).\*

————— range, altitudes in (351—5, 18).

————— cretaceous in (1866a).\*

—————, exploration (351—2 ; —4) (169—2) (722—2) (5) (451—1 to 5 (1211).

—————, scientific results (351—5) (1312—1 ; —2).

—————, fossils from (570—1).

—————, geology (148—2, 42) (451—2, 429).

—————, mesozoic beds in (1690a—1 ; —2).\*

—————, nomenclature (1615—3 ; —4) (1561—3) (669—28).

—————, orography (1291—4).

—————, passes (608—2) (1578—16).

—————, photographic views (1357).

—————, physiography (1578—12, Vol. IV).

—————, rocks and minerals from (351—5, 65) (170) (451—2, 429) (1505—3) (1966—6, 275).\*

————— stones (512—4 ; —7 ; —10) (1338).

Karani, Madras, artesian well (1854—2, 51).

Karanpura coal-field, fossil plants from (570—47, 243).

—————, geology (888—7).

---

\* See Introductory Note—Supplementary List.

Karenni, topography (1478—4) (1340—9 ; —10 ; —12) (568—2) (1141).

———, tungsten and tin ores (211a, 103).

' Karewahs ', Kashmir, alluvial origin (1324—27, 157) (859—51, 152).

———, description and age (502—3, 167) (1109—13, 31 ; —38, 73).

———, inclined, of Pir Panjal (793—31, 38) (1219—29, 120).

———, lacustrine origin (1777—3, 279) (669—1 ; —5.383) (502—2, 209) (1321—1, 18).

' Karez ', construction (103—1, 191) (979).

——— and theory (1324—38, 41).

Karharbari coal-field, fossil plants from (570—42 ; —47).

———, geology (1117—33, 36) (888—3) (1545—1 ; —\*,

———, *see also* Giridih coal-field.

——— flora (570—19, 137 ; —45).

———, history (570—56).

———, relations to Talchir and Damuda floras (570—22).

———, Palamau coal-fields (570—47, 251 ; —52).

———, Satpura coal-basin (570—36).

——— stage (148—55, 145).

———, geological horizon (888—3, 221) (1545—3, 89).

Karikai, alluvium of (1067—1, 156).

———, artesian well (1854—2, 57).

———, pliocene fauna (367).

Karnul district, *see* Kurnool.

Karrak I., Persian Gulf, description (1947).

Kasauli sandstone, petrology (1142—11).

——— stage (1197—5, 12, 85).

———, correlated with Murree series (570—51) (1406—13, 188).

———, extension to Dhauladhar range (1197—41, 52) (1142—11, 189).

Kasauli stage, plant remains from (1197—5, 97).

Kashgar, geology (1712—28 ; —30 ; —31) (1725).

——— physiography (1465—4) (608—3, 26) (1807—1, 249).

Kashmir, descriptive accounts (605) (1246, Vol. II, 83) (926—2, Vol. II ; —3, Vol. III, 139) (1846—1 ; —4, Vol. I, 161), (881—3) (399—2) (1777—3 130) (1000) (103—3) (998) (1041) (1986—8).

———, Gangamopteris beds (1811—45) (1219—26 ; —28, 236).

———, fish remains from (1611) (423—4).

———, plant remains from (1611) (1610—2 ; —3).

———, stratigraphical position (793—14).

———, geology (1846—4, Vol. I, 275) (1712—8 ; —9 ; —10) (1839—2) (1109—7 —13 ; —17 ; —22 ; —26 ; —33 ; —38) (880, 253) (1219—28).

———, glaciation (1777—3, 478) (1109—17, 29 ; —26, 43 ; —38, 32) (1704—4 (1324—66) (1321—1, 48 ; —4, 435).

———, heights and positions of peaks (1243—1).

———, high temperature of ground at Suyam (1846—4, Vol. I, 280) (561—16, Vol. I, 567) (1041, 42) (1009, li).

———, intermittent springs in (1009).

———, lacustrine deposits (669—1).

———, natural history and productions (1245—2) (8—2, 158).

———, occurrence of *Lyttonia* in (1109—50).

———, *Productus purdoni* in (1006—6).

———, permo-carboniferous brachiopoda (431—2 ; —3 ; —4).

———, fauna (479—2) (486—14 ; —42).

———, flora (1611) (1610—2 ; —3).

———, physiography (881—2) (1443—2) (502—3, 161) (857—11, 102) (97—4) (1321—1) (1210—1).

———, silurian fauna (1470—8).

———, silurian-trias sequence (1219—28).

———, tertiary and post-tertiary deposits (1109—13, 31) (669—24)

Kashmir, topography (881—1) (669—2) (815) (502—4, 109) (1292—2).

———, triassic ammonites from (620—5).

———, fauna (479—2, 221) (486—41).

———, valley erosion in (1291—5).

'Katha' beds, Salt Range (1859—26, 182, 241).

Kathiawar, æolian sands of (302).

———, artesian well section in (629—2).

———, coastal erosion (1679—7) (1326—42) (1051) (1901).

———, discovery of fossil mammalian bones in (629—5).

———, geology (228—17) (569—6) (11).

———, jurassic flora (570—41).

———, mechanically formed limestones (555—7).

———, salt-water lake in (629—10).

———, tertiary echinoidea (513—2, 80).

———, topography (924—2) (873) (1145—5).

Katrol series, Cutch (1859—4, Introd) (1198, 258) (1324—41, 221).

———, fauna, *see* Jurassic, Cutch.

'Kattra' shales (288—13, 209).

Kedarnath, geology (35—42).

Kelantan, Malay Peninsula, topography (1896).

Kellaways fauna, Mazar Drik, Baluchistan (1311—20).

Ken series (1854—17, 258).

Keratophyre, Mysore, petrology (1649—3, 134; —5, 16; —6, 11) (937—3, 78).\*

———, Thian Shan range, petrology (666a, 282) \*

Kesselthaler, Shan plateau (1034—45, 25).

'Kevir' (deserts) in Persia (806—13, Vol. II, 143).

---

\* *See* Introductory Note—Supplementary List.

'Khadar' land, definition (1197—27, 9).

———, formation (1233).

Khagan, geology (1109—33, 19; —38, 204, 303).

———, topography (1267, 232).

Khaibar pass, *see* Khyber.

Khanak hills, Rajputana, petrology of rocks from (1142—14, 113).

Kharakpur hills, Monghyr, geology (1181, Vol. II, 176) (1624—2).

———, perforated stone implements from (1763—22).

——— iron, of supposed meteoric origin (1405—34) (733—11) (71—52).

Kharian hills, Punjab, geology (1975—10).

———, list of Siwalik fossils from (1109—1).

'Kharian' series (1763—34, 85, 107) = Upper Siwalik.

Khasi hills, Assam, cavern in (522) (1598—3) (1880—1, 322; —2; —3, 510) (253).

———, cretaceous beds (1326—34) (1197—9, 420; —17, 168) (669—13, 2) (1034—4).

——— fauna (1117—3; —4; —8, 566; —10, 183) (1197—17, 181).

———, geology (1117—8; —9, 66) (867—6, Vol. II, 272) (1326—7, 618; —8) (1197—9, 417; —17) (669—13) (1251—2, 121) (1034—3) (708—33, 20).

———, physical features (253) (1987—2).

———, rock specimens from (383—4).

———, topography (560) (1880—1; —3) (709—4, 1, 157) (669—11).

——— trap, intrusive character (1197—17, 201).

Kheinjua stage, lower Vindhyan (424—1, 145; —2, 79) (1325, 18).

Khewra stage, Salt Range (1311—15, 74) = Purple sandstone.

——— trap (1763—1, 675) (1975—18, 75).

Khingil series, Afghanistan (793—22, 21).

Khirthar series, *see* Kirthar.

- Khondalite series (1872—3, 8).  
 ————, relations with Charnockites (1854—46, 440).\*
- Khondistan, topography and geology (1192).
- Khongbu series, Central Tibet (793—12, 141).
- Khorasan, Devonian fauna (1470—6, 100).  
 ————, geology (708—12).
- Khotan, travels in (1465—1) (445—1; —2, 151).
- Khund-air stage, *see* Kundair.
- Khunmu, Kashmir, section at (1839—2, 161) (1311—45) (793—14, 24).
- Khusak stage, *see* Kussak.
- Khyber pass, description (709—4, 423) (1173—14, 43).
- Kil 'Abdulla, Baluchistan, 'karez' at (979).
- Kilacheri, Madras, deep sea deposit in boring at (1280).
- Kilasa hill, Vizagapatam, description (1924).
- Kinchinjunga (Mt.), circuit of (624—3; —7).  
 ————, description (35—46) (722—3).
- Kinta valley, Perak, geology (1603—20; —27; —32) (957—4).\*
- , tin deposits (1388) (1533).  
 ———, tin ore in limestone of (1603—36).  
 ———, topography (1047).
- 'Kiol series', Kashmir (1109—7, 160).  
 ————, correlated with Krol series (1109—22, 55).  
 ————, represented in Chamba (1142—4, 36).
- Kioto limestone, Cent. Himalaya (240, 236)=Grey limestone.
- Kirana hills, Punjab, geology (591—5, 444) (830—2).
- Kirthar series, Sind (148—46, 11; —56, 168; —63, 45).

---

\* *See* Introductory Note—Supplementary List.

Kirthar series, Sind, corals (512—5, 59).

—————, echinoidea (513—1, 104).

—————, geological horizon (1854—19, 87 ; —20, 173).

—————, Baluchistan (1854—36, 194).

—————, represented in Burma (372—6, 234 ; —8).

Kishangarh State, elæolite and sodalite syenites in (1854—4).

—————, sodalite in (1854—3) (859—59) (403).

Kishtwar, Kashmir, geology (1109—13, 52).

Kistna district, geology (37—1) (596—7).

—————, topography (1130).

———— river, transporting power (1294—51, 480).

———— valley, alleged existence of Gondwanas in (37—2 to 4) (1326—54, 25 ; —66, 7) (1197—64).

—————, geology (1150—1) (596—28) (1652—16).

—————, physical features (1173—11, 307).

———— series (987—7, 240).

Kitchen-midden, Andaman Is. (1712—19) (148—94) (859—47).

—————, Chandwar, Cuttack (71—24 ; —43, 503).

Klian Intan, Perak, tin mines (128).

'Klippen', in Cent. Himalaya, *see* Exotic blocks.

Kodurite series (859—60, 22) (577—32, 243).

—————, position and classification (577—41) (1219—31, 102) (393).

Koh-i-Baba, Afghanistan, topography (1103).

Koh-i-Daman, Afghanistan, physical features (1091—2) (1173—15).

Koh-i-Khawja, Seistan, description (1095).

Koh-i-Nur, diamond, history (1758—2) (1184—1 ; —7) (98—3) (120—2) (71—9 7 431 ; —68 ; —69).

Koh-i-Sultan, volcano (1854—1, 274).

Koh-i-Tuftan (Tufdan), volcano (1142—35) (1143, 292) (1854—1, 271).

Kohat, foliation of rock salt in (1723—11, 30 ; —12, 68).\*

——, fossil fish teeth from (1109—23, 61).

——, geology (1975—15 ; —23).

——, natural gas in bituminous salt from (1723—14).\*

——, origin of salt deposits in (1723—12).\*

——, potash salts of (1723—11).\*

——, tertiary mammalia from (716).

Kojak-Amran range, description (349—1, Vol. II, 125).

Kojak shales (708—4, 32) (1854—36, 202).

——, geological horizon (708—9, 59 ; —32, 51) (1854—19, 89).

Kokulam stage, Madura (596—24, 12).

Koladyne R., Arakan, exploration (1785—1).

Kolahoi, Mt., Kashmir, ascent of (1292—2, 131).

Kolamnala slates, Kurnool (987—7, 253).

Kolar band, of Dharwars (596—34, 37).

—— district, geology (1431—7) (1652—3, 140) (937—2).

—— gold-field, air blasts and quakes in (1652—9 ; —25 \*) (1246a).\*

——, bedded character of auriferous quartz (1324—51, 82).

——, geological structure (555—10) (1654—7) (1848).

——, geology (175—1) (1067—2) (847).

——, origin of ore deposits (577—54, exci).\*

——, petrology of rocks from (859—35).

——, radioactivity of rocks (1899).

——, rock densities in (1652—14).

—— schists, secondary augite in (1652—10).



Kolimalai hills, Salem, description (596—1) (987—2), §

Konarak, Puri, iron beams at (696, 194).

Kondavide hill, Kistna, description (762—1).

Konghsa marls, N. Shan States (1034—45, 139).

Konkan, geology (1104—1) (51—3) (1930) (148—57).

———, petrified forest in (1169).

———, *see also* Ratnagiri.

Korar coal-field, geology (888—29, 165).

Korea State, geology (577—46).

Koshanpri (Shan States), native map of (222—13).

Kosi R., changes in course of (541) (1626).

———, control of (839) (908, 401).

———, course of ———, in 1810 (1181, Vol. III, 9).

———, tributaries (849—4).

Kota, Hyderabad, crocodilian remains from (1353—3).

———, ganoid fish scales from (561—13) (1868—6).

———, geology of neighbourhood (101—1).

———, stage (987—23, 275).

———, geological horizon (842—7, 348 ; —8 ; —9, 201) (372—12, 27).\*

———, relations of ———, to Maleri stage (888—19).

Kot-Maleri series (987—14, 62) (888—20, 81 ; —22, 25).

———, geological horizon (148—54) (987—19, 16).

———, vertebrates from (1109—9, 36) (534).

'Kothair beds' Kashmir (1839—2, 163, 186).

———, fauna (479—2, 221).

Kotli, Jammu, inclination of thrust plane at (1219—34).\*

---

\* See Introductory Note—Supplementary List.

Krafft von Delmensingen, A., obituary notice (486—17).

Krakatoa, effects of eruption of —, on barometer in Calcutta (147—28).

Krau, isthmus of —, description (617).

Krol series (1197—5, 25) (1324—26, 137).

———, palaeozoic fossils in (1854a).\*

———, relations to underlying crystalline rocks (1142—1, 215).

———, frepresente in Nepal (1197—39, 95).

Kuchri ammonite bed, Jaisalmer (148—50, 20) (1324—18, 159).

Kuenlun plains, description (502—3, 344).

——— range, geology (1712—30, 184) (1480—4) (1066).

———, physiography (1577—2) (1578—12, Vol. IV, 91 ; —16, 94).

———, occurrence and analysis of jade (1578—15 ; —17) (1712—27) (24).

———, topography (427).

Kuldana series, Punjab (1975—14, 68) (1219—17, 42).

———, geological horizon (1406—13, 187).

Kuling series (1712—5, 24).

———, geological horizon (708—20, 12) (486—14, 4).

———, Kashmir (1109—38, 132).

——— shales, *see* Productus shales.

——— system (240, 234, 239).

Kulti, Burdwan, crystallized slag from (423—6).

Kulu, concretionary limestone from (1620).

———, geology (1109—22, 53).

———, topography (204) (399—3) (763—1 ; —2) (265—2) (219—2).

Kumaon, altitudes of places in (1906—1 ; —4) (1716—2).

———, geology (1117—2 ; —37\*) (1717—8 ; —9, 65) (1573—3, 115) (890)  
(1197—65) (1219—4 ; —5 ; —6 ; —10 ; —11) (486—5) (1694—2 ; —4).

---

\* *See* Introductory Note—Supplementary List.

Kumaon, Himalayan series in (1324—4).

———, origin of lakes (71—31 ; —43, 559) (1763—30).

———, passes in (1912).

———, physiography (1797—3 ; —4) (1717—9) (1573—1) (48).

———, rock specimens from (1117—5).

———, scientific survey of (1717—7).

———, supposed fossil from (1117—1).

———, topography (1906—2) (828) (1151—2) (86—5) (1572—1) (1573—2) (1090—1 ; —2) (1267).

————— of outer hills (1151—3 ; —4) (86—3).

———, triassic fossils from (1724—1).

———, *see also* Garhwal and Himalaya, Central.

Kunda hills, S. India, geology (110—3, 273).

Kundair (Khund-air) stage (987—6, 7 ; —7, 42).

Kund-ghat beds, Salt Range (1859—26, 210, 241).

Kunigal, geology (1915—2).

Kupfferite, Padar, Kashmir (1034—14, 62).

Kurasia coal-field, geology (888—29, 202).

Kurnool district, caves in (1294—31 ; —37) (596—26 ; —27 ; —30).

—————, fauna (1109—67 ; —68).

—————, examination of sandstone from (1405—18).

—————, fossiliferous travertine in (1294—30).

—————, geology (1294—49, 387 ; —51) (675).

—————, topography (1285) (106).

————— series (987—6, 6 ; —7, 42).

—————, in upper Godavari basin (987—14, 62).

————— 'slates', absence of cleavage in (1326—29).

Kurram valley, topography (1180).

- Kurunégala (Kornegalle), Ceylon, animal-shaped rocks at (1233—1).  
 Kushalgarh, Punjab, Siwalik vertebrates from (635) (561—16, Vol. I, 414).  
 ———, limestone, N.-E. Rajputana (830—6, 56).\*  
 Kushk basin, Afghanistan, topography (1103).  
 Kussak stage, Salt Range (1311—15, 75)=Neobolus beds.  
 ———, fauna (1859—12, 748 ; —26, 89) (1468) (1865).  
 ' Kyaukkyan ' series, N. Shan States (424—3, 118).  
 Kymore series, *see* Kaimur.

## L

- Labechia*, systematic position (1859—24).  
 Labyrinthodont, Bijori, description (1109—40 ; —56).  
 ———, discovery (842—10, 282 ; —11) (147—13) (1326—38) (1636).  
 Labyrinthodonts, Gondwana (1109—34).  
 Laccadive Is., physiography (1323—3, 4) (634—3) (1029).  
 ———, topography (1953) (1503—2) (893, 425).  
 Laccolites, Cutch (143—2).  
 Lacertilia, Siwalik (1109—64).  
 Lacustrine deposits, Kashmir (669—1) (502—3, 207).  
 ———, Kumaon (1324—4, 163).  
 ———, Potwar, Punjab (1763—24, 141).  
 ———, Shan States (1034—45, 310) (32—2).\*  
 ———, gastropod fauna (32—3).\*  
 ———, South Mahratta country (596—12, 228).  
 ———, Upper Indus basin (1712—5, 130) (502—1) (1109—26, 8 ; —38, 65).  
 ———, Yünnan (211—10, 199 ; —13, 115).

---

\* *See* Introductory Note—Supplementary List.

Lacustrine deposits, Yünnan, Paludinidæ from (1167—4).\*

Ladakh, ammonites from (121—1).

———, crystalline rocks (1109—38, 319).

———, eruptive rocks, petrology (1142—18 ; —37).

———geology (1712—9, 347 ; —25) (1109—22).

———, physiography (399—5, 16) (502—3, 260) (451—2, 72).

———, topography (35—62) (1246, Vol. I) (1846—4, Vol. II, 315) (1777—3, 130) (815, 35).

Ladinic stage, Himalaya (486—39, 272).

———, fauna (486—33, 6).

Lahat ' pipe ', Fed. Malay States (1603—11).

Lahaul, geology (1712—9, 340) (1109—22, 53).

———, mountain climbing in (1231—2 ; —3).\*

———, topography (399—3, 211) (763—1, 248 ; —2) (219—2, 46).

Lakanpur coal-field, geology (71—53).

Lake, Abistada, Afghanistan (1173—16, 198).

———, Chilka, Orissa (1706, 187) (148—35, 61) (896—1, Vol. I, 17).

———, Cholamo, Sikkim (867—6, Vol. II, 157, 176) (267—8, 563).

———, Daga, Bassein dist., Burma (1340—11) (1763—9, 23).

———, Er-hai, Yünnan (497—2, 138).

———, Gohna, Garhwal, description (859—12, 59 ; —15) (1098) (1440).

———, date of overflow (148—86) (708—27, 4).

———, Inlé, S. Shan States (1962—2, 579) (32—2).\*

———, Katsupari, Sikkim (867—6, Vol. I, 363).

———, Kosa Nag, Kashmir (1846—4, Vol. I, 292).

———, Kyaghar Tso, Ladakh (502—3, 308).

———, soundings in (1331—2, 127).

---

\* See Introductory Note—Supplementary List.

- Lake, Lonar, Buldana dist. (22—1) (1158—8, 562) (1294—38, Vol. IX, 40) (1658) (148—21, 62) (1034—42).
- , analysis of salts from (1476) (1193—3) (1876) (314—1) (1036, 276).
- , geology and theories of origin (1341—1) (1324—41, 19 ; —68, 147) (1036).
- , Manasarawar, Hundes (1245—1) (647—2, 131) (1717—15, 262) (1622, 259).
- , outlet of (1716—1, 161) (1717—3 ; —15, 395) (1661, 121) (1464—2, 247) (1537—2, 387).
- , soundings in (806—9, Vol. II, 110).
- , Manchar, Sind (1418—1) (999) (1419) (148—63, 23).
- , Naini Tal, origin (1219—12, 228).
- *see also* Lakes, Kumaon.
- , Ngombo Tso, Tibet (806—7, Vol. II, 544 ; —8, Vol. IV, 263).
- , Nongyang, Upper Burma (939—1) (1375—7).
- , Pangong, Ladakh (1777—3, 170) (714) (1716—3, 46) (669—8) (1578—13, 135) (502—3, 317) (806—7, Vol. II, 569 ; —8, Vol. IV, 313).
- , glacial origin (897—6).
- , soundings in (1807—1, 238) (1331—2, 129).
- , Pulicat, Nellore (1294—46, 205) (987—17, 122).
- , Rakas Tal, Hundes (1716—1, 153) (1717—15, 258) (806—9, Vol. II, 166) (1622, 259).
- , Salt, Ladakh, *see* Pangong.
- , Sambhar, Rajputana (857—1).
- , analysis of salt and soil (349—2) (1696—4) (1436—26) (1892—17 ; —18) (859—3, 247) (860, 167).
- , Seistan, *see* Hamun.
- , Sir-i-kol, Pamir (1958—2, 354 ; —3, 232).
- , Tengri Nur, Tibet (1243—10).
- , Tso Moriri, Rupshu (399—3, 228) (1716—3, 50) (1763—4, 513) (1578—13, 117) (502—3, 391).

La' e, Tso Moriri, Rupshu, soundings in (1331—2, 128).

——, Victoria, Pamir (678—1, 389).

——, Yamdok Chu (Yamdo-Croft), Tibet (1243—4, 135) (1561—6) (422—3) (793—12, 132).

——, Yeumtso, Sikkim (267—8, 494).

—— basin, evidence of former existence, in Kashmir valley (502—3, 207) (1324—27, 157).

———, supposed ancient, in Spiti (900—5, 206, 216).

—— basins, ancient, in Persia (148—39, 498 ; —41).

———, glacial, absence in Himalaya (561—16, Vol. II, 648).

———, pleistocene, in Shan States (1034—45, 310) (32—2).\*

———, gastropod fauna (32—3).\*

—— laterite, definition (577—39, 461).

—— terraces, Pangong (1777—3, 172) (669—8, 348) (1578—13, 145) (502—3, 321) (897—6, 609) (806—8, Vol. IV, 345).

———, Seistan (897—2, 293).

Lakes, Hundes (1717—3).

——, Kashmir (1846—1, 767) (399—5, 136, 190) (1109—38, 27, 68) (1041, 20).

——, Kumaon, origin (71—31 ; —48, 539) (1763—30) (708—20, 35).

——, Ladakh (502—8, 292) (1331—2).

——, Nepal (867—6, Vol. I, 236).

——, Pamirs (404, 98).

——, Rupshu (1577—1, 533).

———, origin (1324—27, 156).

——, Salt Range, Punjab (591—5, 235) (1975—18, 46) (1034—37).

——, Sikkim (1755—4).

——, Sub-Himalaya (1197—5, 157).

——, Tarim basin (806—8, Vol. I, 227).

---

\* See Introductory Note—Supplementary List.

Lakes, Thian Shan range (1211—2, 89).\*

——, Tibet (806—6 ; —8, Vol. IV).

——, central (1807—2, 109) (793—12, 131).

——, western (1578—12, Vol. III, 133 ; —13) (1464—1, 416).

——, Turkestan (897—1, 208).

——, Yünnan (211—13, 89).

——, glacial, Central Asia (933, 257).

——, glacier, *see* Glacier lakes.

——, salt, of Asia, distribution and origin (1885).

——, Salt-water, Calcutta, reclamation (1740).

——, Kathiawar (629—10).

Laki series (1311—41, 521).

——, geological horizon (1854—19, 86 ; —20, 173).

——, occurrence in Bikaner (1854—31).

Lalitpur, Saugor, fossil plants from (1117—32).

Lalsot hills, Rajputana, geology (830—5, 193).\*

Lamota beds, chemical origin of —, Central Provs. (793—28, 32) (577a, 86).\*

——, Hyderabad (741a—2).\*

Lameta (Infratrappean) series (1199—3, 196) (1326—69, 76).

—— correlated with Bagh beds (148—22, 216 ; —37, 88).

——, geological horizon (842—3, 197).

——, Bundelkhand (1326—71, 4) (1854—18, 272).

——, Chhindwara (424—4, 224) (577—6, 164).

——, Dongargaon C. P., fish remains from (1963).

——, Godavari district (987—12, 159).

——, Jubbulpore, dinosaurian remains from (1109—76) (1190a—1 ; —2).\*

---

\* See Introductory Note—Supplementary List.



Lameta (Infratrappean) series, Jubbulpore, relations to overlying trap (1197—25).

—————, Nagpur district (844, 163) (148—33, 315, 330).

—————, Rajahmundry (987—18, 234).

—————, South Mahratta country (596—12, 165).

—————, Wardha valley (888—20, 87).

Land connection, Indo-African (1324—46, 173) (634—6; —7, 316; —8).

Landour, geology (587—1, 194) (1892—11).

Landslip, Darjeeling, September 25, 1899 (859—29).

—————, Dharmsala, September 28, 1900 (708—33, 13).

—————, Gohna, Garhwal, September 6, 1893 (859—12; —15) (1717—14) (665).

—————, Naini Tal, September 18, 1880 (1324—2) (641).

Landslips, causes of (1219—12, 230) (859—23).

—————, forming lake basins (71—57).

—————, in Kashmir (1291—5, 346).

Langbeinite, Salt Range, Punjab (1159—58).

Laos, expedition to (1478—1).

Lapidaries' wheel, oriental, description (1062—3).

Las Bela, geology (1854—36).

—————, occurrence of prehnite in (1854—7).

—————, topography (284—2) (776) (777).

Lashio coal-field, geology (1311—4, 112) (1037).

Laterite, Bombay (228—9) (238—14).

—————, Bundelkhand (1197—2, 78) (1854—18, 271).

—————, Burma (1763—16, 244) (1019—2, 5).

—————, analyses (928) (1405—52) (1511—6).

—————, Central Provs. (843, 353, 355) (243—3).\*

---

\* See Introductory Note—Supplementary List.

Laterite, Central Provs., analysis (141).

———, Ceylon, origin (970) (21).

———, Coorg, relations to granite (1294—48, 317).

———, Deccan (1294—18; —32, 990) (148—37, 97) (596—12, 200).

———, Guinea, alteration products (1021—3).

———, Kalahandi (1872—3, 13).

———, Kathiawar (569—6, 105) (11, 122).

———, Konkan (1948—2) (1930) (148—37, 99) (596—12, 224; —14, 35; —15, 47).

———, Madagascar (88—9).

———, Mahanadi basin (71—28, 169).

———, Mahé (1067—1, 153).

———, Malabar (55, 329) (1025—1, 217).

———, Malay Archipelago (220).

———, Mysore (1431—7) (1649—4, 52) (1652—18, 49).

———, Orissa (150, 69) (148—3; —35, 59).

———, Palamau (71—32, 49).

———, Purna valley (1975—7, 4).

———, Rajmahal hills (71—26, 222).

———, Seoni, Central Provs., lacustrine origin (243—3).\*

———, Seychelles (88—7).

———, Singapore (1097—5, 93).

———, Southern India (1294—38, 227).

————— *see also* Lateritic gravels.

———, Surinam (506).

———, Travancore (297—1, 6; —8\*).

———, classification (577—39).

---

\* *See* Introductory Note—Supplementary List.

Laterite, climatic conditions of formation (1204) (1134—12) (1828).

———, composition (88—7, 192 ; —9, 65) (1893) (1603—37).

———, concretionary, Rangoon (1982).

———, cupriferous, Sikkim (173—10, 229).

———, definition (222—1, Vol. II, 440) (390—2 ; —4) (1603—15 ; —21) (555—18)  
(577—39 ; —44) (1324—72).

———, dehydration (859—41, 65 ; —75) (546).

———, determination of hydrous silicates of alumina in (42).

———, detrital, Bengal (S.-W.) and Orissa (148—2, 265, 280).

———, Cutch (143—1, 236).

———, Malabar (228—20).

———, Red hills, Madras (336—1).

———, distinction between high and low level types (1198, 351).

———, formation of ———, compared with ' Terra rossa ' (1372) (1719).

———, in extra-tropical regions (1057).

———, high-level, lacustrine origin (1159—23, 145) (243—3).\*

———, Indian, compared with Antrim bauxite (1159—23).

———, origin, igneous (1085—3, 668 ; —6, 96 ; —7 ; —9, 335) (1853—7, Vol. XIX, 273) (288—3, 199 ; —13, 264) (21).

———, organic (859—41 ; —75).

———, replacement hypothesis (88—7, 192 ; —9, 38) (506) (1829a, 273)\*  
(1134—5) (577—32, 370 ; —50) (275—1 ; —2\*) (390—3)  
(555—19) (1201) (1638) (1021—3, 271).

———, sedimentary (1340—5) (842—2, 62) (51—3, 68) (206—1) (150, 70)  
(148—3).

———, theories of (1025—1, 239).

———, weathering *in situ* under tropical conditions (321—1) (1666—2)  
(970) (228—19) (1881—1, 319) (1121).

———, *see also* Lateritization.

---

\* See Introductory Note—Supplementary List.

Laterite, siliceous, Guiana (577—51).

———, velocity of earthquake shocks in (207—4).

Lateritic bands, tertiary, in Sind (1854—20, 179 ; —35, ix).

——— gravels, Southern India (596—5, 12 ; —8, 27 ; —11, 85 ; —18, 151 ; —?, 203 ; —24, 44) (987—17, 179).

———, stone implements in (596—2 ; —8, 43 ; —17, 91 ; —20, 204) (1326—40).

——— weathering, of Deccan trap (1892—28).

Lateritite, definition (577—30, 507)=Detrital laterite.

Lateritization, process and products (307—1 ; —2) (577—44 ; —50, 34).

———, *see also* Laterite, origin.

Lateritoid, definition and origin (577—32, 381 ; —39, 515).

Lathi series, Jaisalmer (1324—18, 158).

Latitude, changes of ———, as a possible cause of glacial periods (1324—20, 300) (1386, 258) (1006—7, 537).

Lavas, Aden (1158—14, 280) (1159—4, 262) (1077, 314).

———, petrology (1304) (1142—9) (1164) (1854—38).

———, Barren I., petrology (1070, 300).

———, Mauritius (735, 465).

———, Perim I., Gulf of Aden, petrology (1454—2).

———, altered, Dalhousie (1142—4, 34).

———, ancient, Garhwal, petrology (1219—5 ; —6 ; —11, 36).

———, basic, Panjal series (1219—28, 235).

———, feldspathic, W. Baluchistan (1143, 300).

‘ ——— ’, formed by burning of coal seams at the outcrop (577—53 ; —56).\*

Lazulite, Padar, Kashmir (1034—14, 65).

Lead, atomic weight of ———, from Ceylon thorite (1673).

———, native, from Moulmein (1159—38).

---

\* *See* Introductory Note—Supplementary List.

Lead ore, variety of —, from India (1776—3), *see* Mysorin.

Leaf beds, in Karewahs, Kashmir (1219—29, 121).

————, in Kasauli stage (1197—5, 97).

*Lepidocyclina*, distribution in Nummulitic series (1854—22).

Lepidolite, Chota Nagpur, determination of alkaline metals in (1358).

Leptynite, garnetiferous, in Charnockite series (859—31, 142).

Level, changes of —, in crust of Earth (228—3 ; —6) (1426—2).

————, in Sind valley, Kashmir (1324—66, 155).

————, oscillations of —, Andaman Is. (1324—14, 143) (1787—9, 211).

————, Bombay (1975—1, 203).

————, ——— *see also* Forest, submerged, Bombay.

————, Ceylon (1705—1) (1905—2, 266).\*

————, Coromandel coast (1294—19, 247 ; —38, 248) (150, 89).

————, Diego Garcia (179, 443).

————, Irrawaddy delta (1763—9, 23).

————, Malay Peninsula (1970—1).

————, Runn of Cutch (235—11, 560) (691—3, 319) (826) (1032)  
(1326—42, lxxii) (802).

————, Southern India (1749) (1864, 24).

————, retrogression of —, in canals (1631—1).

Lherzolite, Ladakh, petrology (1142—37, 310).

Lias, Cent. Himalaya (708—20, 74).

Liassic fauna, Baluchistan (859—71, 25).

————, exotic blocks, Johar (486—32, 63).

————, Luang Prabang (1167—3).

————, Spiti (1712—5, 67).

———— flora, *see* Rajmahal series, flora.

---

\**See* Introductory Note—Supplementary List.

Lidar valley, Kashmir, geological sections in (1109—13, 43) (1219—26, 319 ; —28, 207).

Lignite beds, discovery at Ratnagiri (450).

Lilang limestone, Spiti (1712—5, 30) (793—9, 87).

——— system (240, 235).

Lilu overthrust fault, N. Shan States (1034—45, 136, 343).

Limburgite, occurrence in Baluchistan (423—9).\*

Lime, absorption of —, by soils, Burma (1891a).\*

Limestone, Aden, fossiliferous (1159—4, 281).

———, Andaman Is., analysis (1159—42, 85).

———, Arabia, lithographic (288—2, 403).

———, Bijawar, Son Valley, origin (1325, 69).

———, Ceylon, analysis (1210).

———, siliceous, microscopic characters (986—2).

———, Chamba, correlated with Krol limestone (1142—3, 309 ; —4, 36).

———, Cochin (397—5).

———, Jaisalmer, discovery of ammonites in (905—3).

———, Kathiawar, mechanically formed (555—7).

———, ———— *see also* Miliolite limestone.

———, Kulu, concretionary (1620).

———, Malay Peninsula (1295—3, 131 ; —4).

———, black variety of (1970—3).

———, tin ore in (1603—36).

———, Manbhum, analysis (1159—11).

———, Muskat, eocene (288—5, 120).

———, Mysore, concretionary (1915—4).

———, Shorapur, perforations in (1751—1 ; —2, 28).

Limestone, Sikkim, fossiliferous (867—6, Vol. II, 176) (637—3, 288).

———, Sylhet (383—1).

———, Travancore (298, 93) (297—7).\*

———, peculiar variety of (1013a).\*

———, Vindhyan, absence of fossils in (1854—29, 249).

———, Central Provs., analysis (1159—36, 111).

———, Jodhpur, bituminous (577—18).

———, Yellambail, Hyderabad, supposed eozoneal (986—1) (987—8, 47).

——— Yünnan, microscopic characters (1092).

———, *see also* Crystalline limestone, Nummulitic limestone, etc.

——— zone, Baluchistan (1854—36, 191).

———, S. Shan States (1219—22, 130).

Limestones, formation of secondary —, in depth (577—45).

Lingagoodium sandstone, Hyderabad (987—14, 60).

Lipak series, Kanawar and Spiti (793—2, 36) (240, 233).

Liparite, Aden, petrology (1520, 36).

Lissar Valley, Kumaon, geology (708—20, 165).

———, Productus fauna (486—18, 100).

Lithomargic laterite, definition (577—39, 461, 513).

‘Littoral concrete’, Bombay (228—11, 179; —17, 16) (148—37, 101).

———, Burma (1763—16, 228).

———, Ceylon (438—8, 12) (199—2, 38) (2) (1233—2, 49) (1905—2, 267).\*

———, Gulf of Manaar (1088, 203).

———, Maldivé Is. (1250, 400) (634—3, Vol. I, 341).

———, Persian Gulf (148—34, 45) (1406—10, 56).

———, Surat (1975—5, 32).

---

\* *See* Introductory Note—Supplementary List.

- Lituola beds, Baluchistan (1854—30, 200).
- Llandovery beds, N. Shan States (1034—45, 125).
- Lobah, Garhwal, volcanic rocks (1219—5, 162).
- Lochambel beds, Cent. Himalaya (486—5, 587).
- Lode tin mining, Malay Peninsula (474).
- Lodes, gold-bearing, Pahang (92—1).
- , wolfram-bearing, Tavoy, origin (211—21).\*
- Loess, Afghanistan (708—16, 102).
- , Asia, age of (1973).
- , Baluchistan (1324—37, 25 ; —38, 39).
- , Salt Range (1859—23, 3) (1006—2) (1034—37, 48).
- , Scistan (708—9, 60).
- , Turkestan (436—2, 58).
- , Yarkand (1712—26, 50 ; —30, 186).
- Lohardaga, topography (1596).
- Lohit Brahmaputra, exploration (1232—1 ; —2) (1937) (61—1, 344).
- Loi Han Hun, N. Shan States, volcanic rocks (1034—34).
- Loi Twang, N. Shan States, geological structure (1034—33).
- Lokzhung Mts., description (502—3, 342).
- London, International Geological Congress, 1888 (148—82).
- Longwall method, of coal mining, in Bengal (876).
- Lora basin, Baluchistan, physical features (123—1) (1980—3).
- ‘ —— ’ series, Jubbulpore (1326—71, 9).
- Lost river, of Indian desert (1323—1 ; —2) (1324—10, 332) (1463—4, 161).
- Lowaghar, Bannu, geological map and section (1839—1).
- Lowo beds, Jodhpur, *see* Pokaran beds.

---

\* See Introductory Note—Supplementary List.



- Lu R., Tibet, lower course of (1871—16).  
 Luang Prabang, geology (1167—3).  
 Lucknow boring, section (1324—33) (1854—2, 30).  
 Ludlow Museum, Siwalik fossils in (65—9).  
 Lushai hills, geology (1034—17).  
 ———, physical features (1743).  
 ———, topography (222—15; —16; —17) (1613).  
 Lu-tze-kiang (Salween) R. (134—3).  
*Lydekkeriana*, gen. nov. (203a).  
 Lydian stone, India, analysis (1038—1, 178).  
*Lyttonia*, occurrence in Kuling series, Kashmir (1109—50).

## M

- McMahon, Lieut.-Genl. C. A., list and index of papers on Himalayan geology and microscopic petrology (1142—24).  
 ———, obituary notice (859—44).  
 Madagascar, laterite (88—9).  
 Madras, boring on beach at (1752).  
 ———, geology of neighbourhood (894—7) (596—5; —8).  
 ———, stone implements from (596—2; —3; —21) (1326—36; —40).  
 ———, topography (1629—2).  
 ———, coast, erosion of (915).  
 ———, flora of upper Gondwana outliers (570—35).  
 ———, oscillations of level (1749).  
 ——— Museum, catalogue of minerals and meteorites (69—5) (176).  
 ——— natural history and minerals (1784—1).

Madras, Museum, catalogue of prehistoric antiquities (596—48).

Madhupur jungle, orig (576—2, 329) (1197—17, 155) (1034—43, 198).

Madura district, geology (69—4) (596—18; —24).

———, topography (1286).

Maestrichtian, Baluchistan, fauna (1311—26) (423—5).

———, occurrence of *Physa prinsepia* in (1854—23).

Maghassani hill, Mayurbhanj, reports on (976).

Magma-basalt, S. India, petrology (859—18, 26).

Magmas, infra-plutonic (577—43).

———, rock, water in (275—4).\*

Magnesia, precipitation of (272—3).

Magnesian Sandstone, Salt Range (591—5, 254) (1975—18, 87).

———, analysis (591—5, 255) (1892—19).

———, sub-division and fauna (1859—26, 91) (1311—15  
79).

Magnesite, Salem, analysis (822).

———, mines (234—2).\*

Magnetic observations, India (1574—2, Vol. I, 275).

Magnetite, Landu, Singhbhum (1593).

———, Vizagapatam, containing manganese and alumina (859—8).

———, intergrowths of —, with hematite (859—30, 112).

———, skeletal crystals of —, characteristic of volcanic rocks and slags  
(1142—5, 160).

Magwe district, Burma, geology (712).

Mahabar Schists, Hazaribagh (1197—19, 42) (1159—7, 36).

Mahadeva series (1326—12, 252) (1197—26, 150).

———, geological horizon (1326—23, 314; —69, 76) (1197—38, 72).

Maha-eva series, Bistrampur coal-field (71—15, 38).

—————, Gawilgarh hills (1975—7, 4).

—————, Johilla valley (888—24, 132).

—————, Mahanadi basin (71—28, 170).

—————, Mohpani coal-field (1197—21, 64).

—————, Narbada valley (1199—3, 183) (173—5, 20).

—————, Orissa (150, 64) (148—35, 58).

—————, Palamau (71—32, 45).

—————, flora (570—47, 258).

—————, Rajmahal hills (71—26, 198).

—————, Sarguja (708—1, 147).

—————, Tapti valley (148—22, 215).

Mahanadi basin, geology (71—28).

—————, physical features (1755—2).

—————, topography (1150—2).

—————delta, report on (374).

—————river, control of (1627) (1755—1).

—————, floods in (771—1 ; —2).

Mahé, laterite (1067—1, 153).

Maidan range, Punjab, geology (1975—28, 261).

Mai-i series, Arakan (1763—16, 311).

'Majhauri' series, Jubbulpore (1326—71, 9).

Makran (Mekran), geology (354—3) (148—34) (1704—2) (1854—36).

—————, pottery and stone implements from (148—52).

—————, topography (694) (673—1) (1026—2) (1517) (1226) (594) (857—9, 314).

—————series (148—34, 43 ; —49, 462).

—————, composition and correlation (1854—19, 89 ; —20, 175).

Makran series, fauna (513—1, 369) (1704—5) (241) (1295—6) (1964—3).

Makum coal-field, geology (1159—9, 304) (1640—9).

Makwari beds, Naga Hills (1369—12, 261).

Malabar district, geology (1294—47) (1025—1).

—————, topography (54—1) (325) (1086) (1061).

Malacca, alleged discovery of mercury in (177—2).

—————, geology (1294—14, Vol. I, 108).

—————, gold mines in (1913—1 ; —2).

—————, tin mines in (392).

—————, topography (185).

Malani, Jodhpur, geology (148—50) (1034—28).

—————, physiography (148—48).

—————, topography (599) (1879).

———— rhyolite, boulders of ———, in Salt Range (1219—10) (1006—7, 454).

—————, petrology (1142—19) (1034—28, 78).

Malay Archipelago, geology (1757—7).

—————, physiography (525).

———— Peninsula, absence of Archæan rocks in (1603—13).

—————, carboniferous fossils from (887).

—————, caverns in (1097—1) (411—2) (33).

—————, coal in (347) (1085—4 ; —5) (1097—6) (1603—3 ; —24).

—————, diamonds in (1482—2).

—————, *Estheriella* shales, age and locality (1295—5).

—————, fossils from (144).

—————, geological history (1603—33).

————— structure (1603—22).

—————, geology (386—1) (919) (1097—2) (1294—9 ; —14, Vol. I, 399)  
(1295—3 ; —4).

Malay Peninsula, gold in (590) (1094—1) (1765) (92—1).

—————, metalliferous formation (411—1).

—————, mineral waters, analysis (1213—2).

—————, mining in (753—2) (92—2) (1889—2) (1364).

—————, monazite in tin gravels (514—15).

—————, obsidianites in (1603—14;—38).\*

—————, physiography (1085—6) (1970—1) (70).

—————, radiolarian beds in (1603—28).

—————, stone implements, Malay beliefs concerning (1603—10).

—————, tin ore deposits (501—3;—4) (1840) (290) (1388).

—————, geology of (1952—2).

—————, mining of (543) (1367) (474).

—————, prospecting (1222a).\*

—————, topography (744, Vol. II, 64) (1544) (1647—1;—2) (1646) (1527) (1952—1).

—————, triassic *Estheriella* from (955—5).

————— lamellibranchs from (1295—2).

—————, *see also* Federated Malay States, Straits Settlements, etc.

Malda district, topography (1383).

Maldivé Is., coral reefs (1250) (14—1;—4).

—————, formation (663) (634—4;—5).

—————, navigable channels in (870).

—————, physiography (100) (14—2) (634—3) (1029).

—————, topography (1355) (1519) (14—3).

Maleri (Maledi), Central Provs., fish teeth from (1326—20) (1216).

—————, reptilian remains from (842—10).

————— stage (987—23, 268).

---

\* See Introductory Note—Supplementary List.

Maleri stage, age of (372—12, 25).\*

———, relations of ———, to Kota stage (888—19).

———, reptilia and amphibia (1109—57).

———, vertebrate remains (1110).

———, South Rewah (888—24, 136).

———, flora (570—42, 188).

———, *see also* Kota-Maleri stage.

Malla Johar, *see* Johar.

——— Sangcha, *see* Sangcha.

Malsej Ghat, Bombay, geology of neighbourhood (750).

Malwa, geology (415).

———, intertrappean fossils from (1158—12).

——— trap (148—10) (1197—37, 56).

Mammal, extinct, allied to *Elurognus*, from Mogôk, Burma (1963—2).\*

Mammalia, cocene, from Burma (1406a).\*

———, fossil, Bhavnagar, W. India (423—14).\*

———, from China (1006—1<sup>a</sup>) \* (1109—87).

———, of India, distribution (1109—24, 23).

———, lists of (1109—4; — 39, 69; — 75, 52) (1406—13, 198).

———, miocene, Baluchistan (1406—9; — 14) (606—1 to 5).

———, correction of nomenclature (1406—15).

———, of India, list (1406—13, 280).

———, Perim I., Cambay (561—9) (1109—28).

———, new genera and species, from Indian tertiaries (1406—12).

———, pleistocene, Ganges alluvium (1406—3).

———, Ghatparbha R. (596—12, 232).

---

\* *See* Introductory Note—Supplementary List.

Mammalia, pleistocene, Godavari R. (148—21, 61) (859—45).

—————, Hingoli, Deccan (698).

—————, Jumna alluvium (1109—35, 33).

—————, *see also* Fossil bones.

—————, pliocene, *see* Siwalik mammalia.

Man, alleged <sup>miocene</sup><sub>pliocene</sub>, Burma, *see under* Burma.

——, antiquity of —, in India (561—14, 383 ; —16, Vol. II, 571) (148—17, 144)  
(1326—47) (1763—21) (1169).

——, in relation to geological time (793—44).\*

——, evolution of (1406—20, 54).

Manbhum district, geology (71—46).

Manchar series, Sind (148—46, 17 ; —56, 171 ; —63, 57).

—————, correlated with Siwaliks (148—73, 160) (512—6, 202) (1109—27, 57).

—————, fauna (1215—1, 9) (1109—10 ; —18, 41).

—————, geological horizon (1854—20, 180) (1406—11, 161).

Mand R. coal-field, geology (71—53, 112).

‘ Mandalay limestone ’, U. Burma (1311—4, 104).

Mandan stage, Alwar (730—2, 89 ; —5, 281)=Raialo stage.

Mandhali series, Jaunsar (1324—5, 196).

—————, correlated with Blaini series (1324—26, 136).

—————, geological horizon (1324—12).

—————, occurrence in Chor Mt., Simla (1324—22, 158).

Mandi State, intrusive basalts in (1142—5).

Mandla district, sub-division of Deccan trap series in (741a—1).\*

Mandlaisir, Narbada valley, granite at (1707—2).

Manganates, note on a group of (577—25).

---

\**See* Introductory Note—Supplementary List.

Manganese ore, Nagpur-Balaghat area, age of formation (577—36).

—————, analyses (577—1 ; —32, 512).

—————, palæolithic implement made of (577—35).

Manganhedenbergite, Nagpur, characters and composition (577—32, 130).

Manganite, Sandur, Bellary, characters and composition (577—7 ; —32, 83).

—————, mode of occurrence (652—2).

Manganmagnetite, composition and origin (577—32, 38).

Mangli (Mangali) beds, Central Provs. (842—7, 347 ; —10, 282) (888—20, 71).

—————, cranium of labyrinthodont from (1353—4).

Manipur, geology (669—18) (1324—3).

Map, geological, Bengal (1625—11).

—————, India, 1854 (669—1 ; —3) (700) (303) ; 1878 (71—34) (1197—49)  
1893 (1324—42).

—————, Mussoorie and Landour (1892—11).

—————, Salt Range, Punjab (1326—74).

—————, Sind (148—59).

——, orographical, Afghanistan and Baluchistan (857—7).

—————, Himalaya (1489—1).

—— topographical (Arrowsmith's), Asia (995—2).

—————, India (1473—3).

—————, Indian Peninsula (1473—4).

————— (d'Anville's), Tibet (521, 184).

Maps, ancient, Indian coast (1580).

—————, Sandarban (1452—2).

——, geological, system of colouring (1197—62).

——, topographical, Andaman Is. (1163).

—————, Bengal, 1779 (1473—1) (840).

Marbal pass, Kashmir, geological section (1109—13, 57).



Marble, *see* Crystalline limestone.

Margalla pass, Punjab, jurassic beds at (1975—12, 62).

Margarodite, from Bengal gneiss, analysis (1344).

Marikanavi, Mysore, analysis of water from (1652—5).

———— dam, report on site (374).

———— gorge, character of rocks (596—43) (1652—4).

————, rock weathering in (556).

'Marine beds of Irrawaddy series' (1763—16, 281).

————, geological horizon (1723—5, 266 ; —6, 274 ; —9, 242)=Akaukaung stage.

———— deposits, Indian Ocean (1275—1 ; —2).

———— faunas, succession of —, in East Indies (1854—50).\*

———— sandstone beds, S. India (1294—38, Vol. VIII, 243 ; Vol. XII, 86)=  
Cuddalore sandstones.

Marl, red, of Salt Range, *see* Salt marl.

Marri hills, Baluchistan, geology (71—19) (1324—37).

————, topography (1756—1 ; —2).

————, upper cretaceous fauna (1311—26).

Martaban system, Burma (1763—16, 328).

Marwar (Jodhpur), geology (148—50) (730—5, 299) (1034—28).

————, physiography (148—48) (99—2).

————, topography (599) (1879).

Masherbrum, Mustagh range, description (1243—6).

————, identification (669—29).

Maskelynite, characters and composition (1808—5, 127).

Maski band, of Dharwars (596—34, Vol. XXII, 34).

Massandim, Arabia, geology (148—36).

---

\* *See* Introductory Note—Supplementary List.

- Mastodon*, characters of —, distinguished from those of Elephant (562—9).  
 ———, new species of —, from Irrawaddy (327).  
 ———, skull of —, from Siwalik hills (292—9).  
 ———, teeth of —, from Perim I., Cambay (1109—49).  
 ———, from Siwalik hills (292—8).  
 ——— *angustidens* Cuv., occurrence of —, in India (1109—43).  
 Masulipatam, geology (37—1).  
 Maulmein, Burma, *see* Moulmein.  
 Mauritius, physical features and geology (735).  
 'Maymyo limestone', U. Burma (424—3, 117)=Plateau limestone.  
 Mayurbhanj State, geology and mineral resources (173—20).  
 ———, tertiary deposits in (173—22) (1787—2).  
 Mazar Drik, Baluchistan, Kellaways fauna of (1311—20).  
 ———, section at (708—27, 7).  
 Medlicott, H. B., obituary notice (148—95).  
*Medlicottia* Waag., remarks on genus (1311—44).  
 Meerschallumite, from Simla (1518—1) (1584).  
 Megalithic monuments in India, chronological sequence of (1606a—3).\*  
 Megalodon limestone, *see* Para limestone.  
 Megna R., survey of —, in 1764-1767 (1034—36, 125).  
 Mekong R., expedition to —, from Moulmein (1139—1).  
 ——— valley, character of —, in Yünnan (211—19, 214).\*  
 Melanterite, occurrence in Baluchistan (868—2).  
 Melaphyre, Son valley, petrology (1325, 86).  
 Melilite, in crystalized slag from Kulti (423—6).  
 Melur stage, Madura (596—24, 14).

---

\*[*See* Introductory Note—Supplementary List.

Menhirs, in Chota Nagpur (71—43, 162).

———, in India (1606a—3).\*

Mercury, alleged discovery of —, in Malacca (177—2).

Mergui Archipelago, caverns in (286—2).

———, physical features and geology (214).

———, rock specimens from (1076—1).

———, topography (1076—2) (1729—2).

——— district, topography (250) (969) (1670, 416).

———, tungsten and tin ores in (211a, 117).\*

———, *see also* Tenasserim.

——— series (1326—13, 33 ; —16, 85) (154—4, 52).

Meridian, Indian, figure of (1426—4).

*Merycopotamus*, new species of (1109—53 ; —59).

——— *dissimilis* Falc. and Cant., osteology (1109—5).

Mesolite, Indian, analysis (1775—1).

———, identified with Poonahlite (181).

Mesopotamia, rock specimens from (1294—53 ; —54).

———, sulphur in (1369—15).\*

Mesozoic beds, Hundes (793—6, 195).

———, Karakoram (1690a—1 ; —2).\*

———, Persia (148—49, 456).

———, Safed Koh, Afghanistan (708—21, 77).

———, Spiti, correlation (793—9, 88).

———, Turkestan (897—1, 163).

———, *see also* Trias, Jurassic, etc.

Metamorphic rocks, Afghanistan (793—22, 11).

---

\* *See* Introductory Note—Supplementary List.

- Metamorphic rocks, Assam (1134—2, 181) (211—5, 246).
- , Bellary (596—31, 99 ; —39, 26).
- , Bengal (1197—19).
- , Bihar (7—1) (1625—4 ; —5) (1197—19) (1159—5 ; —7).
- , Central Provs. (148—33, 301) (424—4) (577—6, 166).
- , Chota Nagpur (71—46, 88, 130).
- , eastern coast (596—17, 7).
- , Hazara (1219—17, 51).
- , Hyderabad, Deccan (35—47) (1853—6 ; —7) (1294—23 ; —24 ; —51) (596—28 ; —29).
- , Kashmir (1109—33, 17 ; —38, 265).
- , Kistna valley (1150—1) (596—7 ; —28, 13).
- , Konkan (1930, 46) (596—14, 29 ; —15).
- , Mahanadi basin (71—28, 181).
- , Narbada valley (1199—3, 130) (173—5, 7).
- , Nellore (987—17, 125).
- , Nilgiri hills (110—1 ; —3) (147—3, 217) (348—2).
- , Orissa (150, 39) (148—2, 254 ; —35, 57).
- , Palamau (71—32, 31).
- , Persia (148—49, 453) (1406—10, 8).
- , Pir Panjal, Kashmir (1109—7, 158).
- , Pranhita-Godavari valley (987—23, 201).
- , Rajmahal hills (1326—6, 265) (71—26, 173).
- , Ruby Mines, Burma (208, 167, 194).
- , Rupshu (1712—5, 126).
- , Sarguja (708—1, 131).
- , Sikkim (173—16, 221).
- , South Mahratta country (596—12, 37).

Metamorphic rocks, Southern India (55) (23) (110—2) (1294—38, 145) (288—13, 182) (988, 269) (596-8, 126 ; —18, 144 ; —20, 191 ; —24, 10).

—————, Swat, N.-W. Frontier (793—34, 275).

—————, Travancore (987—25) (596—25, 23) (297—1 ; —2, 4) (298, 44, 62, 76).

—————, Vizagapatam (110—4) (987—33, 149).

—————, Western India (148—22, 190 ; —37, 84).

—————, Yünnan (1004).

—————, *see also* Crystalline rocks, Gneiss, etc.

————— zone, Hazara (1219—17, 227).

—————, S. Shan States (1219—22, 128).

Metamorphism, rock, as illustrated by granite of Sutlej valley (1142—33).

—————, *see also* Contact metamorphism.

Meteorite, Adhi Kot, Punjab, May 1, 1918 (793—45, 7).\*

—————, Andhara, Muzaffarpur, Dec. 2, 1880 (577—17, 92).

—————, Assam, date unknown (733—15, 229).

—————, Azamgarh, Feb. 27, 1827, *see* Mhow.

—————, Banswal, Dehra Dun, Jan. 12, 1913 (211—11).

—————, Baroti, Bilaspur, Sep. 15, 1910 (372—9, 273).

—————, composition (1437—2 ; —3).

—————, spectrum (391a, 420).\*

—————, Basti (Bustee), U. P., Dec 2, 1852, composition (1184—6, 148).

—————, spectrum (391a, 420).\*

—————, Benares, Dec. 19, 1798 (1080) (1829—2).

—————, mineralogical description (448—2, 181).

—————, Bhagur (Dhulia), Khandesh, Nov. 27, 1877 (1113—1) (195—1) (577—17, 95).

—————, Bholghati, Mayurbhanj, Oct. 29, 1905 (577—15 ; —17, 83).

---

\* *See* Introductory Note—Supplementary List.

- Meteorite, Butsura, Champaran, May 12, 1861 (1390) (1184—2) (733—10).  
 ———, Ceylon, Apr. 13, 1795 (1213—3).  
 ———, Chandakarpur, Berar, June 6, 1838, structure and composition (182—1).  
 ———, ———, ———, spectrum (391a, 420).  
 ———, Chainpur, Azamgarh, May 9, 1907 (859—66, 13) (372—9, 268).  
 ———, Chandpur, Mainpuri, Apr. 6, 1885 (1197—72) (425—1).  
 ———, Charwallas (Chaharwala), Hissar, June 12, 1834 (557—10) (1618—1, 246).  
 ———, Chhabra, Jan. 22, 1911, *see* Tonk.  
 ———, Cranganore, Cochin, July 3, 1917 (1869—3).  
 ———, Dacca, Aug. 11, 1863, *see* Shythal.  
 ———, Dandapur, Gorakhpur, Sep. 5, 1878 (618) (1159—15).  
 ———, ———, ———, spectrum (391a, 421).  
 ———, Delhi, Oct. 18, 1897 (577—17, 90).  
 ———, Dharmasala, July 14, 1860 (360) (1560) (733—4, 305 ; —8) (920) (470).  
 ———, ———, ———, composition (786—7).  
 ———, ———, ———, spectrum (391a, 421).  
 ———, Dharwar, Feb. 15, 1848 (1948—1) (661—2, 54) (228—4, 208).  
 ———, Dhulia, Nov. 27, 1877, *see* Bhagur.  
 ———, Dinajpur, Mar., 1840 (228—4, 202).  
 ———, Dokachi, Dacca, Oct. 22, 1903 (859—30 ; —51, 133) (577—16).  
 ———, ———, ———, composition (182—2).  
 ———, Durala, Patiala, Feb. 18, 1815 (129) (228—4, 198) (166, 16).  
 ———, ———, ———, micro-structure (1184—3, 440).  
 ———, ———, ———, spectrum (391a, 421).  
 ———, Ekh Khora, Budaun, Apr. 5, 1916 (1869—2, 276).  
 ———, Fatehpur, U. P., Nov. 30, 1822 (1824—1) (1618—1, 245) (166, 22).

- Meteorite, Fatehpur, U. P., Nov. 30, 1822, spectrum (391a, 422).\*
- , Goalpara, Assam (733—16) (1808—3).
- , ———, composition (1754).
- , Gopalpur, Jessore, May 23, 1865 (252—1).
- , ———, composition (558) (1808—5, 135 ; —6, 95).
- , Gorakhpur, May 12, 1861, *see* Butsura.
- , Haraiya, Basti, Aug.-Sep. 1878 (577—15 ; —17, 90).
- , India, Nov. 5, 1814 (35—66).
- , Jafferabad, Kathiawar, Apr. 28, 1893 (960—1).
- , Jamkhair, Ahmadnagar, Oct. 5, 1866 (577—17, 95).
- , Jhang, Punjab, June 1873 (569—5, 25).
- , ———, spectrum (391a, 422).\*
- , Judesegori, Mysore, Feb. 16, 1876 (1197—43).
- , Jullunder, iron, Apr. 1621 (706—2) (156—2).
- , Jutala, Mahi Kantha, Nov. 30, 1842 (661—2, 55) (166, 366).
- , Kadonah, Agra, Aug. 7, 1822 (1928) (228—4, 198).
- , Kae, Oudh, Jan. 29, 1838, micro-structure (1184—5, 149).
- , Kalambi, Satara, Nov. 4, 1879 (195—2) (1113—2) (577—17, 94).
- , Kamsagar, Shimoga, Nov. 12, 1902 (211—16, 223).
- , Kandahar, Nov. 1853 (1847) (35—69) (166, 33).
- , Kangra,? 1897, description and spectrographic analysis (780).
- , Karkh, Jhalawan, Apr. 27, 1905 (577—15 ; —17, 85).
- , Khairagarh (Kheragur), Bharatpur, Mar. 28, 1860, micro-structure (1184—3, 446 ; —4, 134).
- , Khairpur, Bahawalpur, Sep. 23, 1873 (1197—34 ; —35) (1326—76, 11).
- , ———, composition (1437—4, 17).\*

---

\* See Introductory Note—Supplementary List.

- Meteorite, Khairpur, Bahawalpur, Sep. 23, 1873, spectrum (391a, 422).\*
- , Kharakpur, Monghyr, *see* Kharakpur iron.
- , Khetri, Rajputana, Jan. 19, 1867 (1326—57).
- , —————, analysis (1866—3).
- , Khohar, Banda, Sep. 19, 1910 (372—9, 274).
- , Kodaikanal, Madras, iron, ? 1890 (859—33) (708—32, 4).
- , —————, silicates in (115—2).
- , —————, structure (1213—4).
- , Kusiali, Garhwal, June 16, 1860, micro-structure (1184—5).
- , Kuttipuram, Malabar, Apr. 6, 1914 (1219—31, 93) (211—16, 209).
- , Lakangaon, Indore, Nov. 24, 1910 (793—26, 68) (372—0, 275).
- , Lalitpur, U. P., Apr. 7, 1887 (1159—49).
- , Lodran, Multan, Oct. 1, 1868 (1326—53) (1808—2).
- , Maddur, Mysore, Sept. 21, 1865 (183—2).
- , Manbhum, Dec. 22, 1863 (733—14).
- , —————, structure and composition (611, 202).
- , Manegaon (Manikgaon), Khandesh, July 26, 1843 (3—1) (228—4, 206)  
(166, 370).
- , —————, composition (140  
—19) (1184—6,  
156).
- , —————, micro-structure  
(1184—4, 135).
- , Mangapatnam, Cuddapah, Jan. 2, 1831 (1158—1) (228—4, 199).
- , Mhow, Azamgarh, Feb. 27, 1827 (1436—2).
- , —————, micro-structure (1184—3, 447).
- , Mirzapur, Ghazipur, Jan. 7, 1910 (372—9, 272).
- , Moradabad, U. P., 1808 (224—2).



- Meteorite, Moradabad, U. P., 1808, micro-structure (1184—3, 449).
- , Moti-ka-Nagla, Bharatpur, Dec. 22, 1868 (569—5, 26).
- , Nageria, Agra, Apr. 22, 1876 (1197—43, 222).
- , Nammianthal, S. Arcot, Jan. 27, 1886 (1197—78) (425—2).
- , spectrum (391a, 423).\*
- , Neglur, *see* Dharwar.
- , Nidigulam (Nedagolla), Vizagapatam, iron, Jan. 23, 1870 (1564—4) (859—33, 3).
- , Oriang, Malwa, Jan. 17, 1825 (35—68).
- , Oujein, *see* Ujjain.
- , Parnallee, Madura, Feb. 28, 1857 (1748—1; —2) (291) (733—5; —7; —12).
- , composition (1396) (224—1, 320).
- , lithology (1213—1) (1184—3, 438).
- , spectrum (391a, 423).\*
- , Pirganj, Dinajpur, Aug. 29, 1882 (577—17, 95).
- , Pirthalla, Hissar, Feb. 9, 1884 (1197—72) (425—1).
- , Pulsora, Rutlam, Mar. 16, 1863 (733—15, 228).
- , Quenggouk, Bassein, Dec. 27, 1857 (733—4; —0).
- , Rampurhat, Birbhum, Nov. 21, 1916 (1869—3).\*
- , Ranchapur, Santal Parganas, Feb. 20, 1917 (1869—3). \*
- , Rutlam, *see* Pulsora.
- , Sabetmahet, Oudh, Aug. 16, 1885 (1197—74).
- , Segowlie, Champaren, Mar. 6, 1853 (1625—13) (1119) (1405—68) (35—70).
- , Shalka, Bankura, Nov. 30, 1850 (166, 382) (733—1; —2).
- , composition (1405—43) (733—3) (1455—2) (611).
- , Sherghotty, Bihar, Aug. 25, 1865 (370).

---

\* *See* Introductory Note—Supplementary List.

Meteorite, Sherghotty, Bihār, Aug. 25, 1865, composition (1100) (1808—4; —5; —6, 87).

————, Shupiyān, Kāshmir, Apr.—June, 1913 (211—16, 221).

————, Shythal (Dacca), Mymensingh, Aug. 11, 1863 (733—13) (224—1, 326).

————, analysis (807).

————, Sindhri, Thar and Parkar, June 10, 1901 (708—34, 3).

————, (?) Singhur, Poona, iron (661—2, 56).

————, Sitathali, Raipur, C. P., Mar. 4, 1875 (1197—42)."

————, Sultanpur, Ballia, July 10, 1916 (1869—3).\*

————, Supuhee, Gorakhpur (224—2, Vol. cxxxvi, 455).

————, Tirhut, *see* Butsura.

————, Tonk, carbonaceous, Jan. 22, 1911 (314—3).

————, Tuttehpore, *see* Fatehpur.

————, Ujjain, June 23, 1838 (350—1; —2).

————, Vishnupur, Bankura, Dec. 15, 1903 (372—9, 266).

————, Visuni, Sind, Jan. 19, 1915 (1869—2).\*

————, Voolapilli, Rajamahendri, Nov. 4, 1844 (130—3).

————, Yatoor, Nellore, Jan. 23, 1852 (733—6).

————, micro-structure (1184—3, 443).

————, growth of alunogen crystals on (1723—2).

Meteorites, catalogue of —, coll. Asiatic Society of Bengal (49) (1713).

————, Geol. Survey of India (569—5) (211—17).\*

————, chondrules in —, origin (1219—31, 98).

————, origin of (577—42).

————, photographic spectra (391a).\*

————, recorded in India (228—4) (176).

————, rotation of —, in flight (733—16).

---

\* *See* Introductory Note—Supplementary List."

- Meteorites, specific gravities (1326—25) (733—3).
- , sulphides of iron in (1159—2, 17).
- Meting shales, Laki series (1854—19, 86).
- Mewar (Udaipur), geology (764—3; —4; —5; —8).
- Miaskite, Vizagapatam, petrology and analysis (1872—4).
- Mica, Burma, Haidinger's rings in (310a).\*
- , Indian, percussion figures in (1872—1).
- , Vizagapatam, asterism in (859—37, 23, 67).
- , crypto-crystalline, in gneissose granite (1142—33, 205).
- , magnesian, Ceylon, analysis (1416).
- , manganese-bearing, India (577—32, 195).
- , mineralogical and chemical characters (859—37, 16).
- , potash, from India, analysis (1644).
- , secondary, in schist from Karakoram (170, 476).
- Mica-diorite, Yünnan (1004, 369).
- Mica-hypersthene hornblende-peridotite, Manbhum (859—14).
- Mica-peridotite, intrusive in L. Gondwanas, Bengal (173—10) (859—13) (865, 196).
- Mica schist, garnetiferous, Garhwal (1219—6, 24).
- , Mysore (50, 640).
- , in boulder-bed of Salt Range, petrology (1219—18, 35).
- Mica schists of Mong Long, Shan States (1034—45, 46).
- Microcline, in Charnockite (859—31, 140).
- , in elæolite syenite, Coimbatore (859—34, 192).
- , in gneissose granite, Dalhousie (1142—8, 131).
- Microgranulite, Kumaon, petrology (1219—11, 31).
- Micropegmatite, in angite-diorite (859—18, 32; —24).

---

\* See Introductory Note—Supplementary List.

Micropegmatite, in pyroxenic rocks (859—17, 25).

Microperthite, Ceylon (356—1, 607).

—————, Sivamalai series, analysis (859—34, 187).

Midnapore district, geology (148—2).

Mihran R., Sind, changes in course of (1463—4).

Miju ranges, Assam, crystalline rocks of (1134—2, 182).

Milam, Kumaon, fossiliferous rocks at (184) (890, 184).

Miliolite, Kathiawar (1763—27, 12) (569—c, 126) (302) (11, 133, 150).

—————, origin (555—7).

—————, Persian Gulf (288—21, 44) (1406—10, 54).

Mikir hills, Assam, geology (1657—2).

—————, topography (1954, 777).

Minbu district, Burma, geology (1369—11, 148) (1417).

———— oil-field, structure (1311—27, 79) (154—5).

Mineral industries, ancient, in western and central Asia (622—1).

—————, in Asia and Africa (622—2).

———— production, India, *see* India, mineral production.

———— resources, Afghanistan (504—2).

—————, Burma (1185—1) (625—7) (501—5) (1721) (1186, Vol. I) (9a).\*

—————, Central Provinces (577—54).\*

—————, Ceylon (356—12).

—————, India, development (801) (71—54) (1376) (1637) (859—64, 21 ; —77).

—————, distribution (148—42) (71—45 ; —62) (987—43) (1679—11) (1531) (859—65 ; —69) (1034—46, Pt. II).\*

—————, early accounts of (71—59).

—————, Jubbulpore district (577—38).

Mineral resources, Mysore (1652a).\*

—————, Nagpur district (577—30).

—————, Yünnan (211—25).\*

————— waters, Ceylon, analyses (1213—2).

Mineralogical survey, Ceylon (356—7) (358—1) (514—18 ; —21) (1368—4) (416—2 ; —3).

Mineralogy, Arabic (324).

—————, Indian, manual (1159—50).

—————, study of —, in S. India (272—5).

Minerals, Burma, in crystalline limestone (208, 206) (88—4, 206).

—————, Ceylon (959) (438—5, 317 ; —8, 17) (729) (1202) (720) (1223) (356—11 ; —17, 52 ; —19) (514—12 ; —16) (1809).

—————, Federated Malay States (514—20 ; —22).

—————, Himalaya (35—42) (827—6) (651) (1159—1, 162).

—————, Hormuz I., Persian Gulf (365).

—————, Indian Museum collection (1159—21 ; —40 ; —41).

—————, Karakoram range (351—5, 65) (170) (451—2, 429) (1505—3) (1966—6, 275).\*

—————, Mundakayam district, Travancore (297—6).\*

—————, Nagpur, description and analysis (786—2 ; —3 ; —5).

—————, Southern India (272—17) (396).

—————, Sutlej valley (337—4).

—————, Yünnan (1581).

—————, accessory, in mica-bearing pegmatites (859—26).

—————, nomenclature of (272—1 ; —2).

Minicoy I., physiography (1767) (82—2) (634—1, 401 ; —2 ; —3, Vol. I, 27).

Mining education, in India (1491).

————— industry, Burma (305).

---

\* See Introductory Note—Supplementary List.

Mining industry, India (555—9) (832) (1034—44) (1762).

—————, *see also* Collieries.

—————, Mysore (555—4 ; —9) (1065—1 ; —2, 41) (1832a).\*

————— records (888—25).

————— regulations, mica (859—37, 96).

—————, Mysore (1832a).\*

Miocene, Andaman Is. (1787—9, 201).

————— Baluchistan (708—4, 18) (1406—11, 141).

—————, fauna (1406—9 ; —14) (606—1 to 5).

—————, Burma (1763—16, 270) (1311—22, 63 ; —36, 21) (409, 618).

—————, fauna (1311—21 ; —37) (372—2) (409, 622) (1723—5, 265, —6, 273).

—————, vertical distribution and composition (1311—36, 42).

—————, Henzada district (1723—9).

—————, Magwe district (1369—7 ; —8).

—————, Yenangyaung (1326—17, 312) (1311—27, 106) (712, 58).

—————, fauna (1406—2) (1369—4 ; —5).

—————, Minbu district (1311—27, 79) (1417).

—————, Myingyan district (712, 66) (1369—1 ; —3) (372—3 ; —4).

—————, Pakokku district (1311—27, 172) (712, 34) (372—5).

—————, Promé district (1723—5).

—————, new species of *Dendrophyllia* from (1370).

—————, *see also* Pegu system, Promé series, etc.

—————, Cutch, echinodermata (513—2, 51).

—————, Garo Hills, Assam, fauna (1654—51).\*

—————, Kathiawar, echinodermata (513—2, 80).

---

\* *See* Introductory Note—Supplementary List.

Miocene, Mikir hills, Assam (1657—2, 83).

———, Perim I., Cambay, *see* Perim I., ossiferous beds.

———, Persian Gulf (1406—10, 22).

———, Sind, *see* Gaj series and Siwalik.

Miocene age (?), of Cuddalore series (1854—33).

——— Man, *see* Burma, alleged miocene man in.

——— oyster, survival of —, in recent seas (1297).

Mirzapur district, flaked and chipped stones from (987—50).

———, mineralogical notes on gneiss in (1159—5).

Mishmi hills, Assam, topography (1926—1 ; —2, 344) (709—1 ; —4, 21) (1528).‡

———, *see also* Lohit Brahmaputra.

Mogaung sands, Burma (1763—16, 260).

———, geological horizon (1723—5, 267).

Mogôk, Ruby Mines, Burma, skull of extinct mammal from (1963—2).\*

Mogôk gneiss (208, 194) (1034—45, 33).

———, northern extension of (1094a—2, 208).\*

Mogul's diamond, history (71—67, 435).

Mohpani coal-field, geology (1197—21).

Mollusca, freshwater, in Siwaliks (292—3, 593) (561—16, Vol. I, 389) (1109—36, 106).

———, intertrappean, Central Provs. (1684—3 ; —7) (844, 166).

———, jurassic, S.-W. Arabia (1296).

———, living, of Indian Ocean, origin (1854—45).\*

———, pleistocene, from raised beach, Perim I., Aden (229).

———, Nārbada gravels (1763—2, 284 ; —17) (1109—36, 106).

———, post-tertiary, Ceylon (1295—7).

———, Ranikot series (368).

---

\* *See* Introductory Note—Supplementary List.

- Mollusca, recent marine, evolution in Indian tertiaries (1854—43).
- Mombasa, occurrence of Indian forms of ammonite at (121—3).
- Monazite, Ceylon (356—18) (35—89).\*
- , Federated Malay States (514—13; —15; —17).
- , Pichhli, Gaya district (1787—13, 259).\*
- , S. Shan States (953—2).\*
- , Travancore (297—4).\*
- Monchiquite, Mt. Girnar, Kathiawar (555—8).
- Mong Long, Burma, mica schists of (1034—45, 46).
- Mongolia, fossil mammalian bones from (1109—87).
- Monkey, fossil, of Siwalik hills (293—2).
- Monuments, ancient, in Afghanistan (793—20).
- , Indian megalithic, chronological sequence (1606a—3).\*
- , distribution (1582).
- , pre-historic, in Deccan (1751—3).
- , stone, Chota Nagpur (147—10) (71—43, 162).
- , Khasi Hills (1880—1, 322; —3, 502) (1987—2, 617).
- , Mungapet, Hyderabad (987—15).
- Moraines, Chogo glacier (1967—1, 251) (1966—2, 172).
- , Hispar glacier (1966—3, 123; —5, 232).
- , Pindari glacier (1717—1, 798).
- , Potting glacier (713—1, 114).
- , Siachen glacier (1967—8, 283) (1966—6, 244).\*
- , Thian Shan range (436—2, 84).
- , absence of frontal —, in Himalaya (451—2, 175).
- , ancient, Cent. Turkestan (897—1, 186).

\* See Introductory Note—Supplementary List.



Moraines, ancient, Dalhousie (1142—4, 49).

—————, east Nepal (867—6, Vol. I, 231, 259).

—————, Hindu Kush (708—13, 263 ; —15, 25 ; —18).

—————, Kashmir (502—3, 218) (1109—17, 29) (1704—4, 67) (1324—66, 154) (1219—29, 123).

—————, Kumaon (713—2, 302).

—————, Naga Hills, Assam (669—20) (1324—3, 229).

—————, Pamir (1442, 133).

—————, Punjab (1763—20) (1796).

—————, Sikkim (867—6, Vol. II, 103) (148—31, 418).

—————, Spiti (1324—27, 152).

—————, conditions of formation (1967—3, 34).

—————, effects of pressure on (1967—7, 73).

Morar series, Gwalior (730—1, 35).

Moscovian, Yunnan (211—13, 100).

Motur stage, Satpura basin (1197—26, 161) (952—3, 46).

Moulmein, geology of neighbourhood (595—4) (1511—1).

Moulmein system (1326—13, 33 ; —16, 85) (1763—10, 325).

—————, Tenasserim valley (173—18, 151).

Mounds, scoriaceous, Bellary (1294—7 ; —28) (336—3) (596—32, 261, 272) (1612).

Mountain attraction, effect of —, on determination of relative height of Mt. Everest and K 2 (1426—5).

—————, on plumb-line in India (1426—1 ; —3) (1871—2) (239—2 ; —4) (588—3).

————— building, theories of (1197—5, 187) (1219—10, 187 ; —29, 136) (1324—36 —75 \* ; —76 \*) (239—7 ; —8) (588—4 ; —5).

————— compensation, *see* Isostatic compensation.

————— chains, circular form of (1025—7).

Mountain chains, S. India, relation of —, to stratification (23).

———— systems, *see* Orography.

Muar, Malay Peninsula, topography (1294—6).

Mud avalanche, *see* 'Shwas.'

Mud banks, Malabar coast (147—19) (1432).

————, Travancore coast (744, Vol. I, 330) (1161) (1496) (298, 54).

————, alluvial origin (441).

————, analysis of mud from (1283).

————, effects of —, on wave motion (1324—9) (1025—2 47).

————, microscopic composition of mud (1232).

————, nature and mode of formation (987—29) (1025—2).

————, subterranean source (505, 218) (385) (1173—2; — 3).

Mud veins, in tertiary beds, Yenangyaung, Burma (1311—27, 126) (1369—11, 72).

Mud volcano, False I., Ramri, submarine eruption (165—3).

————, Foul I., Arakan, fiery eruption (211—7).

Mud volcanoes, Afghanistan (1140—2, 398).

————, Arakan, alleged tendency to eruption during the rains (1159—44).

————, eruptions, Mar, 12, 1879, and June 1843 (1159—22).

————, lists of (1159—13, 197; — 44).

————, recent accounts of (211—1).

————, submarine eruptions (757) (878) (1373) (1914) (1934—2) (797) (1159—60) (754) (211—4; — 6).

————, Burma (1369—11, 211).

————, Cheduba I. (742, 435) (1159—13).

————, eruptions (1159—26; — 34; — 30; — 43; — 47).

————, Makran (776, 143, 152) (1495) (542) (673—1, 208) (1026—2, 102) (1704—2).

————, analysis of gas from (314—2).

Mud volcanoes, Makran, composition of liquid discharged from (1026—3).

—————, Minbu, Burma (1326—17, 339) (1311—27, 81) (255—2, 263).

—————, Ramri I. (595—3, 26) (1687—6, 146) (1159—13).

—————, eruptions (1934—3) (1159—16).

—————, rock specimens from (1405—15).

—————, Tipperah (1324—54, 111).

Muktinath, Nepal, burning well at (1243—12, 356).

Mundakayam district, Travancore, minerals of (297—6).\*

Mungapet, Hyderabad, monoliths at (987—15).

Murchisonite, in Bezwada gneiss (987—33, 150).

Murree, Punjab, geology of neighbourhood (591—6, 199) (1859—3) (1975—14).

—————, topography (676).

Murree series (1975—14, 66 ; —17, 118 ; —21, 366) (1406d—1, 152).\*

—————, correlated with Dagshai and Kasauli stages (570—51).

—————, geological horizon (1406—13, 188).

—————, Hazara (1219—17, 43).

—————, Kashmir (1109—38, 87).

Muscat, Persian Gulf, geology (288—5 ; —7, 24) (148—36).

—————, occurrence of *Dolium variegatum* Lamk. at (1854—47).\*

Muscat series (1406—10, 19).

Muschalkalk, classification of Ceratites in (486—25).

—————, Himalayan, fauna (486—4 ; —30).

—————, systematic arrangement (1010—3) (486—30, 256).

Muscovite, Bihar (570—5).

—————, analysis (153).

Museum of Economic Geology, Calcutta, organization (1802—1) (1405—11)  
(1791—1).

\* See Introductory Note—Supplementary List.

Museum of Economic Geology, proposed establishment at Agra (1666—4).

Musical sands, Afghanistan (235—16 ; —17, 157) (1091—2, 537).

Mussoorie and Landour, geology (587—1) (1197—5, 66) (1892—11).

Mustagh-Ata, Pamir, ascent of (806—2 ; —4, Vol. I, 356).

Mustagh pass, description (1986—1, 507 ; —2) (573).

——— range, brachiopoda from (431—3).

———, survey (669—33).

———, *see also* Karakoram range.

Muth series (1712—5, 21).

———, geological horizon (1324—27, 151) (708—19, 163 ; —20, 60) (793—28).

———, Kashmir (1219—28, 216).

Muth system (240, 233).

Mutla R., description (1089).

Muttra, U. P., analysis of saline water from (1043—4).

Myelat, S. Shan States, peculiarities in drainage of (339).

Myingyan district, Burma, geology (712, 55).

Myitkyina district, Burma, geology (1311—23, 9).

Mysore district, geology (1915—1) (937—3 ; —4 ; —7) (1450).

——— State, Archæan rocks (1652—24).\*

———, radioactivity (1652b).\*

———, corundum in (1723a).\*

———, decorative and building stones of (596—45).

———, Dharwar system in (596—22 ; —33 ; —34) (50).

———, dyke rocks of —, petrology (1915—10).

———, geological history (1652—21 ; —23).\*

---

\* *See* Introductory Note—Supplementary List.

Mysore State, geological survey reports, 1894-96 (596—42; —44): 1897-1904 (1652—1; —2; —6; —7; —8): 1905-06 (1915—11; —12; —14): 1906-10 (1652—11; —12; —15; —18): 1910-11 (1915—16): 1911-14 (1652—19; —20; —22 \*): 1916-18 (937—9; —10).\*

————, geology (321—2) (1294—16) (596—41) (1915—5).

————, iron ore in (1838—6).\*

————, mineral resources (1652a).\*

————, mining industry (555—4; —6) (1065—1; —2, 41) (1832a).\*

————, topography (222—1) (1477).

Mysore, characters and composition (1776—1) (834—2, 441) (1159—19).

## N

Naga Hills, Assam, celts from (1690—2).

————, geology (669—18) (1324—3) (1369—12).

————, glacial action (?) in (669—20) (1324—3, 229).

————, rock specimens from (1190).

————, topography (689) (1375—1; —3).

Nagamalai stage, Madura (596—24, 13).

Nagari quartzites, Cheyair series (987—7, 168).

Nagir, advance of glaciers in (196).

Nagpur, fossils from (842—5; —6) (1110).

————, geology (938—1) (1158—8, 558) (842—2; —9) (843) (148—33) (577—29).

————, intertrappean beds (844).

————, cypridæ (955—1).

————, insects (1272).

————, mollusca (844, 166).

————, minerals (786—2; —3; —5) (577—30).

Nagpur, plant-bearing sandstones, age of (842—3; —7; —8) (1326—23, 334).

———, stone circles near (1490—1).

———, topography (941—1).

Nahan, Sirmur, discovery of Siwalik fossils near (292—3, 528).

———, fossil elephant's tooth from (65—1).

———, temperature of wells at (1539).

Nahan stage (1197—5, 13, 101).

———, correlated with L. Siwalik of Punjab and Sind (1324—41, 357, 364)  
(1406—13, 193).

———, Jammu (1197—41).

———, Kumaon (1219—10, 86; —12, 217).

Nahan-Siwalik unconformity (1197—60) (1198, 537) (1763—34, 103) (1219—10, 182).

Naini Tal, geology (1219—12) (859—23).

———, landslip, Sept. 18, 1880 (1324—2) (641) (71—57).

Nallamalai range, geology and physical features (1853—3, 121) (987—4).

Nallamalai series, Cuddapah (987—7, 212).

Namohik valley, Assam, section of coal measures in (1369—10).

Namhsim series, Shan States (859—66, 52) (1034—45, 120).

———, fauna (1470—1, 92; —10, 66).

Nam Tien series, Yunnan (211—19, 230).\*

Nam Tu R., N. Shan States, change in course of (1034—29).

Namyau series, Shan States (1034—26, 85, 94; —45, 303).

———, brachiopod fauna (227—1; —2).\*

Nanda Devi, Kumaon, description (1090—1, 206).

Nandyal shales, Kurnool series (987—7, 42).

Nanga Parbat, Kashmir, height and position (1243—1).

---

\* See Introductory Note—Supplementary List.

Naniazeik, Burma, crystalline rocks of (1742) (154—2).

Naning, Malay Peninsula, topography and geology (1294—2; —14, Vol. I, 190).

Naogaon sandstone, Disang series (1159—9, 286).

Napeng stage, Shan States (1034—45, 284).

—————, fauna (798).

Narbada alluvium, agate splinters from (3—3).

—————, ancient pottery in (173—4).

—————, artesian wells in (1197—61, 212).

————— ossiferous gravels (288—17, 619) (1763—2) (148—22, 227) (1854—16).

—————, age of (1326—41, 8) (1197—28).

—————, lunodont suina (1109—46).

—————, carnivora (1109—44).

—————, chelonia (1712—18) (1109—55; —80).

—————, cranium of *Boselaphus namadicus* from (1406—8).

—————, equidæ (1109—31).

—————, fossil bones from (1684—2; —5; —8; —11; —13)  
(1436—15; —19) (1405—9) (1521) (1215—1, 11)  
(1109—36).

—————, fossil mammalia, list of (1109—47, 122).

—————, mollusca (1763—2, 284; —17) (1109—36, 106).

—————, proboscidea (1109—21).

————— river, course of (456—1) (1349—5; —6).

—————, floods in (629—3) (877).

—————, nature of bed (967) (966—1) (571) (748—1; —2).

—————, occurrence of granite in (1707—2) (3—4).

—————, silt transported by (1679—8).

—————, source of (1573—4, 105).

————— valley, calcareous concretions (? organic) from (1684—12).

Narbada valley, cretaceous beds in (1326—13, 116).

—————, *see also* Bagh beds.

—————, fossil sites in (1684—5 ; —8).

—————, geological section of (1684—4).

—————, geology (1684—10) (1199—3) (629—12) (148—22) (173—5).

—————, physical features (905—1).

—————, topography (607) (772).

Nar-budhan dome, Jammu, structure (1219—33).\*

Narcondam I., extinct volcano, bibliography, 1884-94 (1159—55).

—————, description (71—16 ; —41, 25 ; —43, 403 ; —66),  
407 ; —70) (845, 281) (1424—2, 42).

—————, soundings in neighbourhood of (1159—48).

Nari series, Sind (148—46, 13 ; —56, 169 ; —63, 49).

—————, corals (512—5, 68).

—————, echinoidea (513—1, 247).

—————, geological horizon (1854—19, 89 ; —20, 174).

—————, Baluchistan (148—73, 158) (1406—11, 141 ; —13, 187).

—————, represented in Burma (372—6, 231).

Narji (Nerjee) limestone, Kurnool series (987—7, 70).

Narnaul district, Patiala, geology (173—21).

Narra R., Sind, *see* Eastern Narra.

Narrikal, mud bank (1496) (987—29, 20) (1025—2, 44).

—————, microscopic composition of mud (1232).

'Nat-meo' (Spirit fire), Pegu (508).

Natrolite, from Deccan trap (414).

Natural bridge, Gokteik, Burma (1034—30).

Naungkangyi series, Shan States (1034—26, 83 ; —45, 67).

---

\* *See* Introductory Note—Supplementary List.



Naung kangyi series, fauna (1470—1; —10).

—————, northern extension of (1094a—2, 210).\*

Nautilidæ, cretaceous, S. India (147—6) (1712—4).

Navanagar State, Kathiawar, geology (11).

Neck, intrusive, at Wajra Karur, Anantapur (596—36) (1025—3).

Negrais series, Arakan (1763—16, 298).

—————, Henzada district (1723—9, 250).

Nellore district, geology (987—17).

—————, occurrence of samarskite in (1787—7; —11).

—————, sipylite in (1787—14).\*

—————, rock specimens from (1422).

—————, topography and geology (174).

Nemalite, Afghanistan, characters and analysis (1159—56).

Neobolus beds, Salt Range (1975—18, 86) (1859—26, 91) (1311—15, 75).

—————, discovery of trilobites in (987—42).

—————, geological horizon (1975—26; —27) (1859—9, 560).

—————, sections in (1219—14, 24).

—————, *see also* Kussak stage.

Neocomian fauna, Baluchistan (1311—25)=Belemnite beds.

'Neogene' species (1311—37, 52, 61).

Neolithic celt, Coorg (147—17).

—————, Jashpur (1961—2).

————— implement, Pahang (1295—3, 132).

————— settlements, Bellary (596—32, 268).

Nepal, geology (867—6, Vol. I, 177) (1197—39).

—————, jurassic and triassic fossils from (859—70) (1470—3).

---

\* *See* Introductory Note—Supplementary List.

Nepal, physiography (267—4) (849—5).

——, river system (849—4).

——, soils (268).

——, topography (990) (222—3) (35—72) (849—1 ; —3 ; —7) (855, 206) (1243—12).

Nepaulite, characters and analysis (1405—57) (1159—46).

Nepheline-syenite, Vizagapatam Hill Tracts, petrology and analysis (1872—4).

Nephrite, characters and composition (115—1).

———, Turkestan (1576—11) (1578—15 ; —17).

———, analysis (24).

Nerinea beds, U. cretaceous, Pondicherry (1892—21, 18) (1008—3, 61).

Nerjee limestone, *see* Narji.

*Neuropteris*, remarkable specimen of (230—1).

Newboldite, characters and analysis (1405—29) (1159—50, 18).

'Newer' or 'Overlying' trap (1294—38, Vol. IX, 20)=Deccan trap.

Ngahlaingdwin, Minbu district, Burma, geology of neighbourhood (1417).

Nga-tha-mu beds, Arakan (1763—10, 277).

Ngwetaung sandstone, Mandalay district (1034—45, 66).

Nicobar Is., geology (1398, 269) (1487—1) (846—1 ; —3) (71—6 ; —10).

———, correlated with that of Andaman Is. (1787—9, 206).

———, fossil foraminifera from (1592).

———, polycystina beds (536—1 ; —3).

———, fauna (536—2, 160).

———, topography (1755—7) (338—1) (853) (245) (472—1) (1730—1 ; —2) (1488) (997, 201).

Nieves penitentes, in Himalaya (1965—5, 97) (1967—3, 17 ; —4 ; —5) (1966—3, 125 ; —4, 163).

Nigana hills, Rajputana, petrology of granite from (1142—14, 114).

Nilawan ravine, Salt Range, derivation of name (1892—25).

Nilgiri gneiss (987—17, 125).

——— hills, altitudes in (1826).

———, contact metamorphism of granite in (348—1; —2, 232).

———, geology (110—1; —3) (147—3) (348—2).

———, topography (1983) (943) (710).

Nimar sandstone, Narbada valley (173—5, 23).

———, correlated with Bagh beds (859—38, 20).

Ninniyur beds, Trichinopoly (147—8, 141).

———, correlated with Cardita beaumonti beds (1854—26, 195).

———, geological horizon (1067—1, 147) (1008—3, 68).

Nirmal hills, Hyderabad, fossil shells from (1158—5; —7, 108; —8, 548).

Nishapur, Khorasan, turquoise mines, analysis of minerals from (1436—4).

———, description (1571) (1786—1).

Nithahar stage, Alwar series (730—2, 86).

———, Biana hills, Rajputana (830—5, 189).\*

Niti limestone, Himalaya (1311—48, 140)=Nodular limestone, Spiti.

——— pass, description (1717—6).

———, geology (86—1) (1717—8, 302).

———, palæontology (1547) (388—3).

Nitre caves, Ceylon (438—8, 30, 377, 429; —10) (416—1).

Nizam diamond, dimensions (590).

———, history (1405—33) (244).

Nodular limestone, cretaceous, Narbada valley (173—5, 36).

———, triassic, Spiti (793—9, 67)=Niti limestone.

Nodules, of iron ore, in laterite, Ceylon (657).

———, sphærolitic, obtained by trawling off Colombo (952—5; —8).

---

\* See Introductory Note—Supplementary List.

*Noeggerathia*, remarks on genus (570—19, 200 ; —40).

————, relations with living plants (201).

*Noeggerathiopsis*, remarks on genus (570—40).

Nomenclature, geological, unification of (1197—62).

Noric stage, Himalaya (486—39, 295).

————, fauna (486—33, 95).

Norite, Coonoor, petrology (859—18 ; —20).

———, in Charnockite series (859—31, 157).

————, analysis (1893a, 328).\*

———, Travancore (297—1, 2 ; —2, 7).

North Arcot district, geology (596—8 ; —20).

————, stone implements from (596—2 ; —3).

————, topography (381).

North Cachar Hills, geology (1034—3, 202) (1657—2, 71) (793—21).

North-East Frontier, geography (1118—2) (782) (857—13).

North-West Frontier, orography (1561—4 ; —5) (1871—1) (857—8 ; —11, 24).

————, passes (1173—12 ; —14).

————, stone circle on (1397—3).

————, topography (15) (1894—1) (857—9).

Northern Circars, geology (110—4).

————, *see also* Vizagapatam.

Northern India, *see* India, Northern.

——— Shan States, *see* Shan States, Northern.

Novaculite, Zewan beds, Kashmir (793—14, 29).

Nuddea rivers, report on (1028).

Nuggihalli Schist belt, Mysore (1549—3, 37).

---

\* *See* Introductory Note—Supplementary List.

'Null,' salt-water lake, Kathiawar (629—10).

Nummulites, Burma, described (372—7; —10, 77).

————, Indian, zonal distribution (1854—19, 85).

————, value of —, as zone fossils (372—10).

*Nummulites douvillei* Vred., described (1854—19).

———— *vredenburgi* Prever, nom. mut. (1854—27).

Nummulitic fauna, India (418).

————, Sind (147—1) (288—18) (569—4).

————, molluscan (368).

———— limestone, Rajpipla, discovery (629—11).

————, Sind, rock salt in (708—28, 88).

————, Singhe La, Kashmir (1777—3, 381) (1034—10).

————, Tarkeswar, Surat, discovery (1507—1).

———— series, distribution of *Orthophragmina* and *Lepidocyclina* in (1854—22).

————, see also Eocene.

———— zone, Hazara (1219—17, 177).

Nun-kun Mts., Kashmir, exploration (1965—5) (1967—3) (1966—4) (1291—2; —5 353).

Nurwara Eliya, Ceylon, fluvatile gravels at (970).

Nyaungbaw limestone, Shan States (1034—26, 82; —45, 119).

————, fauna (1470—1, 86; —9).

## O

Obolus beds, see Neobolus beds.

Obsidian, Aden, petrology (1304, 549).

Obsidianites, Malay Peninsula (1603—14; —38).\*

---

\* See Introductory Note—Supplementary List.

Ocean basins, permanence of (148—88).

Deccan, Indian, *see* Indian Ocean.

Dil, in mud banks, Travancore coast (987—29, 16, 25).

—, sedimentary deposition of (1723—8).

• Okenite, Poona, analysis (786—8, 114).

Oldhamite, in Basti aerolite, characters and composition (1184—6, 149).

Oligocene, Burma (1763—16, 269) (1723—9, 247).

—————, fauna (1723—5, 262).

—————, Persian Gulf (1406—10, 22).

—————, Sind, and Baluchistan, *see* Nari series.

Oligoclase, Bengal gneiss, analysis (1344).

—————, in granite, Sutlej valley (1159—27).

Olive series, Salt Range (1975—18, 103) (1311—24, 75 ; —38, 425).

—————, bivalves from (1859—25).

—————, geological horizon (1892—14).

—————, occurrence of *Conularia* in (1859—19) (1324—17) (1197—76) (1975—33) (1892—24).

Olivine, in Deccan trap (793—26, 89).

Olivine-dolerite, intrusive in Malani series (1034—28, 25, 91).

Olivine-gabbro, Cuddapah area, petrology (1025—4, 259).

—————, N. Shan States, petrology (1034—45, 60).

Olivine-norite, Coonoor, petrology (859—18 ; —20).

Olivine-porphry, Aden, petrology (1854—38, 331).

Oman, Persian Gulf, description of fossils from (486—34).

Oman series (1406—10, 9).

*Omphalia*, occurrence near Nameho lake, Tibet (570—17).

Ondwe, Burma, inlier of Pegu beds at (1369—8).

Oolitic flora, Cutch, *see* Jurassic,

'Oolitic' series, India (288—13, 203)=Vindhyan-Gondwana systems.

*Operculina arabica*, form and structure of shell (288—9).

Ophiceras beds, Spiti (793—8, 192) (1010—2, 200) (486—39, 218).

Oplidia, Siwalik, described (1109—64).

Ophir Mt., Malacca, description (1294—1) (185).

Oprang valley, Yarkand, physical features (1986—3, 209).

*Orbitoides*, cretaceous, of India (1854—26).

———, remarks on genus (288—26).

*Orbitolina*, occurrence in India and Persia (1854—80).

Orbitolina limestone, Chitral (793—34, 279).

*Orbitolites malabarica* Carter, structure of shell (288—12).

——— *mantelli* Carter, large variety of ———, from Burma (288—25).

Ordovician, Himalaya (1717—8, 302) (708—19, 161; —20, 55) (793—9, 20).

———, fauna (1547) (1470—7).

———, Shan States (1034—45, 63).

———, fauna (1470—1; —9; —10).

———, Yunnan (212) (211—19, 220)\*

———, fauna (212, 328).

——— fauna, distribution (1470—5, 17).

Ore, definition of (577—31).

Ore deposits, Archæan, genesis of (577—55)\*

———, Bawdwin mines, Burma (211—20)\* (1094d—1)\*

Ores, oxidised, formation in depth (577—45).

Organic origin, suggested, of laterite (859—41, 61; —75).

O'Rileyite, Burma, composition (1866—4) (1159—50, 15).

Orissa, geology (994—4) (148—1; —2; —35) (896—1, Vol. II, 161).

---

\* See Introductory Note—Supplementary List.

Orissa, geology, *see also* Talchir coal-field.

———, laterite in (148—3).

———, stone implements from (71—5—25).

———, topography (1262) (1706) (994—3 ; —5) (896—1).

Ormuz I., Persian Gulf, *see* Hormuz I.

Orography, Afghanistan (545, 94) (912, 747) (881—5) (134—1) (857—7).

———, Asia (892—4) (1724—2, Vol. I, 544 ; Vol. III, Pt. I, 344) (1015—2) (240, 47) (704—5).

———, Central Asia (892—6) (1253—2) (1281) (1318) (461).

———, Ceylon (446) (1069—1).

———, Himalaya (892—3 ; —5, Vol. I, 73) (849—5) (1576—6 ; —9) (1561—2 ; —4) (1173—10) (148—67) (669—25) (1324—41, 6) (857—11, 102) (1321—2 ; —4) (240, 75) (465—2).

———, connection with geological structure (669—26).

———, Hindu Kush (1173—15).

———, India (1561—1).

———, Indo-China (1739, Vol. I, 609).

———, Karakoram range (1561—3) (1291—4).

———, Kashmir (881—2) (399—5, 41) (502—3, 31, 192, 260) (857—11, 102).

———, Malay Peninsula (1757—4).

———, Nepal (624—9).

———, North-West Frontier (1871—1) (1173—12 ; —14) (1561—5) (857—8 ; —11, 24, 56).

———, Pamir (1987—8, lv).

———, Rajputana (1197—53).

———, Southern India (23) (745—1 to 3) (1173—1) (1629—3) (188—3, 722) (857—11, 130).

———, Tenasserim (1340—2 ; —4).

———, Tibet (476—1, 317) (806—8, Vol. IV, 537 ; —10, 386) (793—12, 123) (1347).



Orography, Yunnan (1050).

Orthite, Ceylon, analysis (1809, 163).

*Orthophragma*, distribution in Nummulitic series (1854—22).

Osbornite, in Basti aerolite (1184—6, 149).

Ossiferous beds, Baluchistan (1845—3, 264).

————— fauna, *see* Miocene.

—————, Hundes (1717—3, 306) (1109—30).

—————, skull of antelope from (1109—88).

—————, Kharian hills, Punjab (1975—16).

—————, Salt Range (1845—6, 40) (1975—18, 112).

—————, Sheikh Budin (369, 379).

—————, Sind (1845—5, 335).

—————, Subathu (1845—4 ; —5, 349 ; —7, 72).

—————, eocene, Pakokku district, Burma (1406a).\*

————— breccia, Billa Surgum, Kurnool (1294—31 ; —37) (596—26 ; —27 ; —30).

————— conglomerate, Gangetic alluvium (1406—3).

—————, Kathiawar (629—5).

—————, Perim I., Cambay (882) (1102) (1104—2) (1300, 20)  
(228—17, 23) (561—16, Vol. I, 393) (1763—27, 11)  
(569—6, 111).

—————, Yenangyaung, Burma (226—1) (95) (1326—17, 315)  
(1311—22, 78) (712, 62).

————— gravels, Betwa R., Bundelkhand (1845—2).

—————, Ghatparbha R. (596—12, 232).

—————, Godavari R. (148—21, 61 ; —22, 232) (1326—47) (1406—4).

—————, Indian Peninsula (288—13, 305).

—————, Jumna R. (442—1) (1324—11).

—————, Narbada R. (288—17, 619) 1763—2) (148—22, 227) (690, xlii).

---

\* *See* Introductory Note—Supplementary List.

Ossiferous gravels, Narbada R., age of (1326—69, 78) (1197—28).

—————, Purna valley (1975—7, 2).

—————, *see also* Pleistocene gravels and Fossil bones.

*Ostrea latimarginata* Vred., occurrence in 'Yenangyaung Stage,' Burma (1855).

*Ostrea multicosata* Desh., occurrence in India (1854—32).

*Ostrea promensis* Noetl., identified with *O. digitalina* Eichw. (1854—42).

Ostreidae, Indian tertiary, classification (793—24, 62).

Otocerat beds, Himalaya (708—3, 102).

—————, age of ———, permian (1311—35; —38, 467; —40, 656; —43)  
(1010—5).

—————, permo-triassic passage beds (708—19, 165; —20 70)  
(1859—26, 232).

—————, triassic (1236—1, 377) (486—11, 170; —15; —16; —29;  
—39, 243) (133—1, 74) (1011, 169).

—————, elements of Mediterranean fauna in (486—40).

—————, in Armenia (168a).\*

—————, occurrence in Salt Range (1311—34).

—————, sub-division (1311—43, 546) (486—22, 2) (1011, 165).

Otoliths, in Miocene, Burma (1369—9).

Outlier, tertiary, near Simla (793—45, 9).\*

Outliers, of Dharwar, S. India (596—34, Vol. xxii, 17).

—————, Vindhyan, South of Son R. (1324—49).

Overthrust fault, Lilu, N. Shan States (1034—45, 359) (1035, 239).

————— faults, sub-Himalayan (1219—10, 78, 116).

—————, origin of exotic blocks, Chitichun (486—13, 12).

Owk shales, Kurnool series (937—7, 67).

Oxford Museum, supposed Spiti fossils in (147—14).

Oxus R., course of (235—13, Vol. II, 186) (1987—8).

---

\* See Introductory Note—Supplementary List.

Oxus R., drainage area and discharge (1955).

———, sources (1958—2, 345 ; —3, 266) (678—1, 393) (427, 31) (467, 536) (404, 44).

*Oxyglossus pusillus* (*Rana pusilla* Owen), osteology (1712—17).

Oyster, miocene, survival in Bay of Bengal (1297).

Oyster banks, raised, as evidence of coastal elevation (1763—14).

——— bed, Calcutta, discovery (1854—14).

———, fauna (32) (1297).

## P

'Paars,' Gulf of Manaar, formation of (1088, 203).

Pab sandstones, Baluchistan (1854—23, 117).

———, correlated with *Cardita beaumonti* beds (1854—26, 192).

———, pseudo-fucoids from (1854—29).

Pachmari hills, fossil amphibian from (147—13).

——— stage, Mahadeva series (1197—20, 155).

Pachumba, Bihar, copper blooms from (1551) (1326—70).

Padaukpin, N. Shan States, Devonian coral reef at (1034—45, 196).

Padaung crays, regu series (372—11, 165).

Pagan, Burma, native map of (222—11).

Pahang, geology (1295—3, 130) (1694—1) (1603—25).

———, gold quartz deposits (92—1).

———, physical features (266).

———, stone implements from (1731).

———, triassic lamellibranchs from (1295—2).

Pahang R., exploration (1493).

Pahang volcanic series (1603—19, 427 ; —33, 350) (1933a).\*

---

\* See Introductory Note—Supplementary List.

- Painkhanda, Kumaon, geological sections in (708—20, 87).
- , Traumatocrinus limestone fauna (486—37).
- Paithan, Aurangabad, geology and physical features (187—8).
- , ossiferous gravels at (1975—2) (1326—47) (148—21, 61 ; —27, 232).
- Pakhal system, Godavari basin (987—23, 209).
- Pakokku district, Burma, coal in (741a—4).\*
- , geology (712).
- Palæogene species (1311—37, 51).
- Palæozoic (Upper) formations, Eurasia (1810).
- fossils (?), in Krol beds, Simla (793—39, 11) \* (1854a).\*
- ice age, *see* Glacial Period, Palæozoic.
- plant stems, India, anatomy of (855a—3).\*
- rocks, N. Punjab, distribution (1975—29).
- sequence, in Spiti (708—19, 161) (793—6, 185).
- Palagonite, in Rajmahal and Deccan traps (1219—9).
- , Kathiawar (11, 100).
- traps, Abor hills, Assam (211—5, 241).
- Palaman coal-fields, correlation of lines of faulting in ———, with coast lines (1339).
- , fossil flora (570—47 ; —52 ; —53).
- , geology (888—0) (71—32).
- district, topography (1771—2) (601).
- Palamoda trap, Cuddapah, petrology (1025—4, 260).
- Palar R., Madras, abnormal flood in (1714a—2).\*
- Palezkar beds, Afghanistan (708—9, 62 ; —12, 57).
- Palghat pass, description (1294—45, 775).

---

\* *See* Introductory Note—Supplementary List.

- Palk strait, Cuddalore sandstones in (1067—5).
- Palkua shales, L. Vindhyan (1197—2, 10, 29).
- Palm leaves, tertiary, N.-W. Himalaya (570—51).
- tree, in intertrappean beds, Saugor (1687—5) (1303—2).
- Palnad beds, Hyderabad (987—7, 107, 115).
- Palni hills, analyses of gibbsite and hydrar gillite from (1892—26; —27).
- , topography (1882) (745—1).
- Paludinidæ, fossil, from Yünnan (1167—4).\*
- Pamban strait, survey (1635) (1701—3).
- Pamir, geology (148—62, 35) (793—34, 300).
- , petrology of rocks from (20—1).
- , physiography (1987—8, lv) (1712—29) (1465—4, 429) (1807—1, 261; —3, 198) (281) (1253—1) (1986—4) (806—1) (404) (1442) (1588).
- , topography (1958—2, 345; —3, 226) (1243—8) (467) (678—1; —3) (1986—3) (857—9, 284).
- , triassic fossils from (1725, 458).
- Pamir limestone (793—34, 309).
- Panch Mahals district, geology (96a—2).\*
- Panchet series (148—7, 126).
- , conditions at time of deposition (148—9).
- , correlation (1326—32).
- , flora (570—8, 65; —39).
- , occurrence of *Glossopteris* in (570—19, 139).
- , reptilia and amphibia of (148—9) (902—1 to 3) (1109—16) (423—13).\*
- , Auranga coal-field (71—32, 86).
- , Bokaro coal-field (888—2, 103).
- , Central Provs. (1326—69, 74).

---

\* See Introductory Note—Supplementary List.

- Panchet series, Karanpura coal-field (888—7, 318).  
 —————, Raniganj coal-field (148—7, 126) (1869, 261).  
 —————, Sarguja (708—1, 146).  
 Panel system, plans for —, in Indian coal mining (646—2).  
 Panghsapye graptolite band, Shan States (859—66, 51) (1034—45, 125).  
 —————, fauna (1470—10, 69).  
 Pangl, Chinab valley, geology (1142—16, 90).  
 —————, petrology of granite from (1142—13, 54).  
 Pangl Blate group (1109—13, 54).  
 Pangong slates (1109—22, 32).  
*Pangshura tecta* Bell, Narbada gravels (1712—18).  
 Pangyun beds, Shan States (211—20, 145).  
 —————, geological horizon (1004a—2, 209).  
 Paniam (Panium) stage, Kurnool series (987—6, 7 ; —7, 52).  
 Panjal range, Kashmir, geology (1109—7) (1219—29).  
 —————, physical features (1292—1).  
 Panjal system (1109—13, 34 ; —38, 209).  
 Panjal volcanic series (1109—38, 217) (1219—28, 232).  
 —————, Yasin (793—34, 296).  
 'Panna sandstone,' Bundelkhand (288—13, 227).  
 Panna shales, U. Vindhyan (1159—3, 62).  
 Panna State, geology (1854—18).  
 Pantellerite, Aden, petrology (1164, 194).  
 Papaghi series, Cuddapah system (987—7, 148).  
 Par series, Gwalior (730—1, 34).  
 Para limestone, Himalaya (1712—5, 62) (793—9, 87)=Grey limestone, Kumaor,  
 and Megalodon limestone.

Para stage, Himalaya (240, 236).

*Paraceratherium bugtiense* Forster-Cooper, described (606—1).

*Parallelodon egyptianus* Stol., occurrence in Somaliland (1295—1).

*Paramachærodus*, remarks on genus (1406—21).

Parasnath hill, Hazaribagh, stone implements from (71—33).

Parh limestone, Baluchistan, *see* Belemnite beds.

Parihar beds, Jaisalmer (1324—18, 159).

Paris, International Geological Congress (148—92).

*Parkeria* Carp., compared with *Stoliczkuria* Dunc. (512—7).

Parsora stage (372—12, 29)\*=Middle Gondwana.

Passage beds, cretaceous-eocene, Baluchistan (1311—41).

—————, permo-triassic (708—19, 165; —20, 70) (1859—26, 215, 232).

Passes, Afghan (1173—12; —14).

———, Arakan Yoma (1798—1; —2) (1384—1) (1987—6).

———, Bashahr (827—1) (647—1; —3) (1079) (1151—1).

———, Hindu Kush (1173—15, 111).

———, Karakoram range (1578—16).

———, Pamir (404, 110).

———, Suleiman range (1173—14, 47).

Patarghatta hill, Bhagalpur, geology (147—11).

Patcham stage, Cutch (1198, 254).

—————, fauna, *see* Jurassic, Cutch.

Pathanian stage, Baluchistan (708—31, 57) (1311—41, 527) (1854—26, 191).

Patiala State, fossiliferous 'kankar' in (679).

—————, geology of Narnaul district (173—21).

Patkai range, Assam, routes across (709—4, 60, 115) (939—1; —2) (1375—6; —7).

---

\* *See* Introductory Note—Supplementary List.

Patna, boulders in alluvium at (1333).

Paupugnee series, *see* Papaghni.

Pavagad hill, Panch Mahals, geology (577—12) (96a—2, 75).\*

Pavement, glaciated, in Central Provs. (148—33, 324) (569—3).

—————, in Salt Range (1007—1, 97).

Pavulur sandstone, U. Gondwana (596—13, 256 ; —17, 72).

Pea stalactite, Tibet, composition (1698—5).

Peaks, Himalayan, *see* Himalayan peaks.

Pebbles, distorted, in Siwalik conglomerate (1219—7).

—————, facettcd, *see* Boulders, facettcd.

Pegmatite, Ceylon and Salem, petrology (1021—2, 170).

—————, Chota Nagpur (1134—1, 73).

—————, Hazaribagh (1159—7, 39).

—————, Panch Mahals (96a—2, 113).\*

—————, aquamarine-bearing, Baltistan (1219a, 163).

—————, enclosed in basaltic dyke, Bombay (288—23, 178).

—————, mica-bearing, aquo-igneous origin (859—26).

—————, geological occurrence (859—37, 30).

—————, Nellore, petrology (1787—11).

—————, monazite-bearing, Travancore (1183, 6).

—————, supposed diamond-bearing, Anantapur (301—1 to 3) (596—36, 44) (1693).

Pegmatites, as index to geological age of Peninsular rocks (1854—49).\*

Pegmatitic charnockite (859—31, 172).

—————, clrcolite-syenite (859—33, 184).

Pegmatoidal pyroxene-plagioclase rocks, Nilgiri hills (859—31, 186).

---

\* *See* Introductory Note—Supplementary List.



Pegu, geology (1117—35) (1763—16) (1019—2).

———, native map of (222—14).

———, physiography (1936).

———, topography (1805).

Pegu system (1763—6, 80 ; —16, 268) (409, 618) (1369—11, 14).

—————, classification (1311—22, 63 ; —36, 10 ; —37, 6) (1855, 129) (1723—5, 261).

—————, correlation (1723—6).

—————, fossil fish teeth from (1723—7).

—————, *see also* Miocene, Burma.

Pegu-Eocene succession, Minbu district (372—6).

Pelecypoda, morphology (1311—32).

Penang, *see* Pinang.

Pench R. coal-field, geology (148—13 ; —71) (1676) (952—3).<sup>†</sup>

Pendulum, observations of —, in India (82—1) (1871—4 ; —12, 1116) (239—6) (1058).

—————, compared with those at Kow and Greenwich (1871—19).

—————, *see also* Gravity.

Penganga basin, fossil mammalia from (698).

Penganga beds, Pranhita-Godavari valley (888—20, 11) (1198, 74) (987—23, 221).

Peninsula, Indian, *see* Indian Peninsula.

Peninsular gneiss, Mysore (1652—21, 148).

Pennar R., Madras, stone implements from (1608).

Pennar-Haggari band, of Dharwars (596—34, Vol. xxii, 29).

Perak, coal in (1603—3 ; —24).

———, *Estheriella* shales in (1295—5).

———, geology (455—3, 342) (1757—6) (463) (1603—1 ; —27 ; —32) (957—4).\*

---

\* *See* Introductory Note—Supplementary List.

Perak, physiography (406) (1757—5; —6).

——, productions (1970—2).

——, stream tin deposits (1757—1).

——, strüverite in (1603—29).

——, tin mining in (501—4) (455—1; —2) (738) (739) (1970—5) (1351).

——, topaz crystals from (1022).

——, topography (444) (1047) (1191) (455—4) (480).

——, *see also* Federated Malay States.

Percolation, in Jumna alluvium (65—5) (1197—71).

Percussion figures, in Indian micas (1872—1).

Peridotite, peculiar form of altered —, Mysore (859—86).

——, petrology of —, Bengal coal-fields (173—10) (859—13; —14) (864, 126).

——, Hassan district, Mysore (1549—9, 87).

——, Ladakh (1142—18, 115; —37, 310).

Perim I., Aden, descriptive and historical account (984).

——, geology (1298) (1454—1; —2).

——, pleistocene mollusca from raised beach on (229).

Perim I., Cambay, geology (552—1) (1102) (1104—2) (1300) (228—17, 23) (561—16, Vol. I, 391) (1763—27, 11) (569—6, 111).

——, ossiferous beds, discovery (882) (881—4).

——, emydine from (1109—70).

——, jaw of *Dinotherium* from (507—2).

——, *Hyotherium* from (1109—71).

——, mammalia from (561—9) (507—1) (1109—28).

——, *Mastodon* teeth from (1109—49).<sup>‡</sup>

——, ruminant from (118) (1353—1).

——, vertebrates from (1215—1, 3) (1948).

Perim I., Cambay, ossiferous beds, lists of vertebrates (629—1) (1109—36, 104).

Periyar R., diversion of (1173—6).

Permian, equivalents of —, in Himalaya (486—12).

———, Himalaya (793—9, 51).

———, fauna (486—10 ; —18).

———, India, distribution (1311—40).

———, Karakoram pass (1725, 457) (682a).\*

———, Salt Range, classification (1311—34 ; —38, 383).

———, correlation (620—8).

———, Yunnan (1031, 336) (211—13, 112).

Permo-carboniferous, Afghanistan (708—13, 240 ; —14) (793—22, 21, 26).

———, Asia, southern and eastern (593).

———, Assam, Subansiri R. (1134—2, 186).

———, fauna (486—20).

———, Baroghil pass, Chitral (793—34, 291).

———, Bazar valley (793—4, 109).

———, Eurasia, correlation (1810) (1586).

———, Himalaya (1712—5, 24) (708—20, 66) (486—12).

———, fauna (486—9 ; —14 ; —42).

———, India, flora (38—3).

———, Karakoram (682a).\*

———, Kashgar (1712—31, 14).

———, fauna (1725, 451).

———, Kashmir (669—5 ; —6 ; —9) (1839—2, 129) (1109—13, 41 ;  
—26, 24 ; —38, 132) (1219—26, 289, 297 ; —28,  
237).

———, fauna (431—2 ; —3 ; —4) (479—2) (486—14 ; —42).

---

\* See Introductory Note—Supplementary List.

- Permo-carboniferous, Kashmir, flora (1611) (1610—2 ; —3).
- , relation to Panjal volcanic series (1324—65).
- , Sind valley (1109—33, 19).
- , Zangskar basin (1109—22, 44).
- , Malay Peninsula, fossils from (887).
- , Oman, Arabia, fauna (486—34).
- , Salt Range, *see* Productus limestone.
- , Shan States (1219—22, 137) (1034—45, 256).
- , fauna (486—38).
- , Spiti, fauna (486—14).
- , Tenasserim (1326—13, 33) (1763—16, 325) (173—18, 151).
- , fauna (1311—12).
- , Trans-Indus Salt Range (1975—28, 239).
- , Yünnan (211—13, 107 ; —19, 228).\*
- , fauna (1167—1, 693 ; —2, 462 ; —3).
- , ice age, *see* Glacial period, palæozoic.
- Permo-triassic boundary, in Himalaya (486—15 ; —39, 243).
- , in Salt Range (1311—47).
- , *see also* Otoceras beds.
- Persia, cretaceous fossils from (1406—1).
- , Devonian fossils from (1413) (1470—6, 100).
- , geology (148—49, 439).
- , occurrence of *Orbitolina* in (1854—30).
- , physiography (148—41) (673—3, Vol. I) (1735) (897—2) (806—13).
- , superficial deposits of —, nature and origin (148—39).
- Persian Gulf, asphalt rock from (514—6).

---

\* *See* Introductory Note—Supplementary List.

Persian Gulf, former extent of (98—1 ; —2) (289—1 ; —2).

—————, geology (619—7) (1298, 279) (288—5 ; —7 ; —21) (148—34) (1406—10).

—————, physiography (288—6).

—————, rock specimens from (228—2) (1294—53 ; —54).

—————, salt caves and mines in (1451).

—————, tertiary echinoidea from (513—1, 370).

Persian Gulf Islands, geology and topography (1923) (1382) (1406—10, 112).

Peshawar, topography (377).

Petrified forest, S. Konkan (1169).

————— wood, *see* Fossil wood.

Petrifying quality, of Irrawaddy water (22—2, 34 ; —3) (226—1, 391 ; —2).

Petrographic classification, problems of —, suggested by Kodurite series of India (393) (577—41).

Petroleum, in N.-W. Punjab (1406d—2).\*

—————, possible occurrence in Jammu territory (1219—33).\*

—————, remarks on origin (1369—11, 225 ; —13, 318).

—————, sedimentary deposition of (1723—8).

Petroleum industry, development in Assam (917a).\*

Phisdura, Nagpur, Lameta beds at (844, 163).

—————, reptilian remains from (842—10, 282).

Phonolite, Aden, petrology (1835—33) (1520, 36).

'Physa beds,' Central Provs. (148—37, 93)=Intertrappean beds.

*Physa prinsepis* Sow., observations on (32—5).\*

—————, occurrence in Maestrichtian, Baluchistan (1854—23).

Physiological effects, at high altitudes (971—2).\*

Pichhli, Gaya district, occurrence of pitchblende, etc., at (1787—13).\*

Picrolite, Jade mines, Burma, petrology (88—1, 96) (154—3, 260).

---

\* *See* Introductory Note—Supplementary List.

- Piddingtonite, in Shalka meteorite (733—1 ; —3).
- Piedmontite schist, Karakoram range (170, 474).
- Pinang, Straits Settlements, geology (1884—2 ; —3) (1294—14, Vol. I, 48) (309, 330).
- Pindwalni dolerite, Garhwal, petrology (1219—6, 21).
- Pinnacled quartzites, Paniam stage (987—7, 53).
- Pipe, in limestone, Perak (1603—11).
- Pipes, in limestone, Cherrapunji, Assam (1326—8, 138).
- Pir Panjal, Kashmir, *see* Panjal range.
- Pishin valley, Baluchistan, physical features (680) (123—1).
- , sub-recent deposits (1324—38, 38).
- , *see also* Quetta-Pishin district.
- Pitchblende, Gaya district (793—31, 24) (1787—13, 256).\*
- Pitchstone, Pavagad hill, Panch Mahals, petrology (577—12, 153).
- , trachytic, Aden, petrology (1142—9, 155).
- Pitt diamond, history (872).
- Placenticerus tamulicum* Kossm., zonal distribution (423—10).\*
- Plagioclase-augite rock, Wajra Karur, petrology (1025—3, 71).
- , Cuddapah, petrology (1025—4, 261).
- 'Plant-bearing sandstones,' Nagpur (842—2, 69).
- , age of (842—4<sup>a</sup>; —7).
- , correlated with Damudas, Chhindwara (842—3).
- , fossils from (842—5 ; —6) (230—2).
- , *see also* Kanthi series.
- Plant-bearing series, Afghanistan (708—9, 62 ; —12, 53 ; —16, 97) (793—22, 30).
- , India, *see* Gondwana.
- , Khorasan (708—12, 58).

---

\* *See* Introductory Note—Supplementary List.

'Plant beds,' Cutch, age of (1326—35, 6).

—————, *see also* Jurassic flora, Cutch.

—————, Kasauli stage (1197—5, 97) (570—51).

—————, Pondicherry, *see* Fossil wood, Trivicary.

—————, Ratnagiri (450) (596—14, 34).

—————, Trichinopoly (147—8, 39).

Plant stems, palæozoic, anatomy (855a—3).\*

Plateau, central, of Asia, physiography (1755—5).

—————, Dapsang, Kashmir (451—5, 92).

—————, Kambakam Drug, Madras (1242) (1662).

—————, Turan Mal, Satpura range (1484—2).

—————, submerged, surrounding Ceylon (1674).

Plateau deposits, Ceylon (1905—3, 101).\*

————— gravels, Burma (1763—10, 240) (1311—27, 101) (712, 46, 64) (1723—9, 251).

—————, composition (1369—11, 49).

————— limestone, Shan States (1034—45, 182).

—————, northern extension of (1094a—2, 210).\*

—————, *see also* Devonian and Perno-carboniferous.

————— quartzite, Paniam stage (987—7, 54).

Plateaus, of Ladakh (502—3, 331).

Platinum, occurrence in Ceylon (1368—1).

Pleistocene breccias, Kurnool caves (1294—31; —37) (596—26; —27; —30).

—————, fauna (1109—67; —68).

————— deposits, Afghanistan (793—22, 39).

—————, Baluchistan (1406—11, 165).

—————, Persia (148—49, 465).

\* *See* Introductory Note—Supplementary List.

Pleistocene deposits, Seistan (897—2, 285).

—————, Shan States and Yünnan, *see* Lacustrine deposits.

————— earth movements, in Indian Peninsula (1854—10).

————— gravels, Central Provs. (1326—69, 78).

—————, Ceylon (1905—3, 101).\*

—————, Gangetic alluvium, mammalia from (1406—3).

—————, Ghatparbha R., Belgaum, mammalia from (596—10; —12, 232).

—————, Godavari R., agate flake from (1975—2) (1326—47).

—————; mammalia from (148—21, 61; —22, 232) (859—45) (1406—4).

—————, India, vertebrate fauna (1109—39, 68, 77; —73; —75, 52).

—————, Jumna R. (442—1).

—————, vertebrates from (242—1) (442—2; —3) (561—14, 379) (1109—35, 33) (1324—11).

—————, Narbada R. (288—17, 619) (1763—2) (148—22, 227).

—————, echelonia from (1712—18) (1109—55; —80).

—————, fossil bones from (1684—2; —5; —8; —11; —12) (1436—15; —10) (1405—9) (1521).

—————, mammalia from (1215—1, 11) (1109—21; —31; —36; —44; —46) (1406—8).

—————, mollusca from (1763—2, 284; —17) (1109—36, 106).

—————, stone celt from (1197—28; —29).

—————, Punjab (1975—17; 122; —18, 113) (1763—32).

————— marine beds, S. India (596—24, 55; —25, 30).

—————, Ceylon (856—16).

—————, mollusca, Ceylon (1295—7).

—————, Perim I., Aden (229).

---

\* *See* Introductory Note—Supplementary List.



Pleistocene variations of water-parting, in Cent. Himalaya (486—7).

*Plesiosaurus*, occurrence in India (1109—6).

————— *indicus* Lyd., generic position (1109—79).

Pliocene, Arabian sea coast (288—10).

—————, Burma, chipped (?) flints in ———, *see under* Burma.

—————, worn femur of *Hippopotamus irrawadicus* F. & C., in (1311—28).

—————, *see also* Irrawaddy system.

—————, Persian Gulf (1406—10, 52).

—————, Siwalik hills, Punjab, etc., *see* Siwalik System.

Pliocene age, of Siwalik fauna (148—61).

————— fauna, of Karikal (367).

————— fossils, Makran (1295—6).

————— river, of northern India (1369—14) \* (1406—24).\*

Plumb-line, deflections of ———, in India (1471) (239—4 ; — 6, 296) (588—3) (793—30, 153).

—————, effects of Gangetic alluvium on (1324—73).

————— Himalayan attraction on (1426—1 ; — 3) (1871—2) (239—2).

————— Indo-Gangetic depression on (1324—71, 534).

—————, influence of ocean on ———, in India (1426—0).

Platonic rocks, Afghanistan, petrology (859—21, 126).

—————, Indian Peninsula (288—13, 188).

—————, *see also* Dyke rocks, Igneous rocks, etc.

Po series, Spiti (793—0, 15) (240, 234).

Point-de-Galle series, Ceylon (356—3).

Pokaran beds, Rajputana (148—50, 17) (1324—16, 123).

—————, geological horizon (1324—25, 32).

Polianite, Mysore (577—32, 77).

---

\* *See* Introductory Note—Supplementary List.

Polycystina beds, Nicobar Is. (536—1 ; —3).

—————, fauna (536—2, 160).

Polyzoon, sub-fossil, from Calcutta (1895).

Ponar R., Kumaon, supposed fossils from (1117—1).

Pondaung sandstones, eocene, Burma (372—11, 165) (741a—4, 36).\*

—————, mammalian fauna (1406a).\*

Pondicherry, alluvium of —, composition and distribution (1067—3).

—————, artesian wells at (987—20 ; —21 ; —22) (1197—61, 217).

—————, cretaceous beds (964—1 ; —2 ; —4) (1294—38, 213).

—————, fish remains from (533—1).

—————, fossils from (964—3 ; —5) (1348—1) (496) (1067—4).

—————, sub-division and fauna (1892—21) (1008—3).

—————, *see also* Cretaceous, Southern India.

—————, fossil wood deposit (1294—38, 240), *see also* Trivictory.

—————, geology (309, 363) (1067—1, 145).

Poolumpet slates and limestone, *see* Pullampet.

Poolavainila quartzites, *see* Pulivendala.

Poona, quartz crystals from (1566—1 ; —2).

————, soils from —, analyses (1043—3).

Poonahlite, characters and composition (202) (667—3) (981).

————, identical with mesolite (181).

Popa, Mt., (Puppadaung), extinct volcano, Burma, description (148—6).

Porcellanic (Porcellanite) stage, L. Vindhyan (1159—3, 35) (424—1, 145) (1325, 14).

Porcellanite, Son valley, petrology (1325, 96).

Porebandar stone, *see* Miliolite.

Porphyrite, petrology of —. Chamba (1142—16, 96).

---

\* *See* Introductory Note—Supplementary List.

Porphyrite petrology of—, Mysore (189—1, 652) (1649—10, 30).

—————, Pahang volcanic series (1933a, 460).

—————, Yünnan (1004, 373).

Porphyry dykes, Mysore, distribution (596—40) (1549—2).

—————, petrology (1649—5, 9 ; —9, 40) (1915—10, 3).

Port Blair, Andaman Is., geology of neighbourhood (71—11).

Port Blair series (1324—14, 137) (1787—9, 197).

Pot-holes, Assam (1375—5).

—————, in Cuddalore grits (988, 259).

—————, Kawai R., Rewah (888—29, 193).

—————, Nilgiri hills (110—3, 291).

—————, Perim I., Aden, formed by marine action (958).

—————, Rajmahal hills and Barakar (570—21 ; —28) (71—30).

—————, in Talchirs, Sarguja (708—1, 143).

—————, in Tungabhadra R., formation of (1294—26).

Pot stones, Bihar, petrology (1142—20).

Pottery, pre-historic, from cromlech in Coorg (1326—59).

—————, from Makran (148—52).

—————, in Narbada alluvium (173—4).

Potwar, Punjab, 'erratics' in (1763—24 ; —28 ; —32, 228) (1975—17, 123 ; —19 ; —21, 371 ; —22 ; —30 ; —31).

—————, geological structure (1975—17, 110).

—————, high level gravels in (880, 248).

Pranhita-Godavari valley, geology (987—23).

Pre-carboniferous life provinces (1470—5).

Pre-historic man, in India (561—14 ; —16, Vol. II, 571) (147—16) (1763—21).

—————, *see also* Implements, Stone age, etc.

Prehnite, in Las Bela (1854—7).

Prehnite, sapphire mines, Padar, Kashmir (1034—14, 65).

Pressure, effects of —, in Karakoram glaciers (1967—7).

Pressure-metamorphism, in crystalline limestone, Burma (154—2, 169).

—————, in igneous rocks, Garhwal (1219—6, 13).

—————, Sulej valley (1142—17, 79).

—————, with reference to foliation of gneissose granite, Himalaya (1142—4, 45; —23; —26).

Primates, Siwalik (66—1, 739) (292—10) (293—2) (562—6) (1109—15; —18 33) (1406—20).

Proboscidea, fossil, general characters (562—9).

—————, Siwalik and Narbada (1109—21; —45).

Productus limestone, Salt Range (591—5, 260) (1763—1, 663) (1975—18, 93 —21, 356).

—————, age and correlation (1859—26, 158, 234) (620—3) (1810) (457—2) (1006—7, 400) (715).

—————, classification (1311—38, 383, 433; —40, 645).

—————, fauna (431—1) (454) (1859—7; —10; —11; —12; —16 —17; —18; —20).

—————, fish remains (1109—39, 61).

—————, occurrence of Ammonites in (1859—2).

————— *Helicoprion* in (1006—1).

—————, relations of —, to boulder bed (1311—31).

—————, with ceratite beds (1311—33; —47).

—————, sub-division (1859—26, 241).

Productus shales, Himalaya (708—20, 66) (793—0, 53) (240, 235).

—————, fauna (486—10; —18).

*Productus abichi* Waag., sculpture of (1311—42).

*Productus purdoni*, Dav., in Permian, Kashmir (1006—6).

*Progiraffa exigua* Pilg., correction of nomenclature (1406—19).

Prome district, Burma, axial series in (1763—12).

Prome district, Burma, geology (1723—5) (1369—11, 174).

Prome series (1763—16, 270) (1311—22, 64 ; —36, 11 ; —37, 7).

—————, geological horizon (1723—5, 26).

—————, sub-division (1855, 130).

*Protechinus* Noetl., nom. mut. (1854—41).

*Provelates grandis* Sow, occurrence in tertiary of India and Burma (1311—17).

Provinces, pre-carboniferous faunistic (1470—5).

Pseudo-conglomerate, Dharwar, Kolar (859—35, 79).

—————, *see also* Conglomerate, Dharwar, of autoclastic origin.

—————, in Dunghan stage (1324—32, 94).

—————, Vindhyan, Jodhpur (1034—28, 27, 46).

Pseudo-fucoids, in Pab sandstones and Vindhyan (1854—29).

Pseudo-jade, Afghanistan, petrology (1142—29).

—————, Karakoram, characters and composition (170, 479).

—————, Shigar valley, Kashmir, petrology (1142—37, 312).

Pseudo-jadeite (albite) jade mines, Burma, characters and composition (154—1, 353 ; —3, 267).

'Pseudomorph salt-crystal zone', Salt Range, *see* Salt pseudomorph stage.

Pseudomorphs, of peroxide of iron after pyrites (1866—2).

*Pseudosagceras multilobatum* Noetl., development of suture line (1311—51).

Psilomelane, analyses and characters (1597) (577—32, 97).

*Pterophyllum*, from Raniganj coal-field (570—19, 70).

*Ptilophyllum* Morris, systematic position (570—12 ; —13).

Pudukotai State, geology (596—18).

Pulau Obin, Singapore, geology (1085—2 ; —8) (1603—19).

Pulivendala quartzites, Cheyair series (897—7, 168)=Nagari quartzites.

Pulkoo schists, *see* Palkua shales.

Pullampet slates, Cheyair series (987—7, 203).

'Pungs', Assam (1369—13, 316).

Punjab, changes in geography and river courses (1324—19).

———, chelonia from (1763—23; —29).

———, distribution of palæozoic rocks in (1975—29).

———, economic products (60—1) (741).

———, 'erratics' in, *see* Potwar.

———, fossil vertebrates from (1215—1, 12) (1109—1; —10, 78; —14; —18) (1406—14).

———, geology (1845—6) (1975—12; —13; —21) (1197—81) (1988a)\* 1406a—1; —2)\*.

———, *see also* Salt Range.

———, physiography (931—3, 193) (111) (1576—3).

———, pleistocene deposits (1763—32).

———, rivers, description (235—9, 141) (399—1) (1133) (102).

———, erosion and deposition of silt by (1631—2).

———, geological features (1728).

———, Siwaliks, classification (1406—16, 273).

———, structure and correlation (1975—17) (1763—34).

———, stone implements from (1734) (1763—31).

———, topography (236) (377) (881—3, Vol. III) (926—3, Vol. III) (15) (1692) (1112—2) (961).

———, well-sinking in (1640—2).

Punjabian series, Salt Range (1311—38, 424).

Pu-piao series, Yunnan (211—19, 220)\*.

Purana group, definition (859—58, 47).

———, classification and correlation (859—78).

Purna valley, W. Berar, physical features and geology (1975—7).

---

\* *See* Introductory Note—Supplementary List.

- Purple sandstone stage, Salt Range (1975—18, 84) (1859—28, 89)=Khewra stage.
- Purple sandstone zone, S. Shan States (1219—22, 143)=Namyau series.
- Purple slate series Garhwal (1219—3, 34).
- Putao, Upper Burma, geology and lead ores (1723—\*3).\*
- 'Pyintha limestone', Burma (1311—4, 104).
- Pyrites, in steatite, alteration of (424a).\*
- Pyrolusite, analyses and characters (1159—18) (577—32, 78).
- Pyroxene, manganiferous (577—32, 125).
- , monoclinic, hypersthonisation of (1606a—1).\*
- , rhombic, in igneous rocks, Singapore (1603—12 ; —19, 422).
- Pyroxene gneiss, hybrid, Central Provs. (793—31, 12).
- , petrology of —, Ceylon (1021—2, 173).
- , Ruby Mines, Burma (208, 199).
- granulite, petrology of —, Ceylon (1203, 92) (487, 243) (356—1, 592  
    . 606).
- , S. India (859—30, 116 ; —31, 128).
- , *see also* Charnockite.
- rock, Idar State (793—28, 11).
- , micropegmatitic intergrowths of garnet in (859—17).
- Pyroxenite, in Charnockite series (859—31, 164).
- , analysis (1893a, 330).\*
- , intrusive in Charnockite, Ceylon (356—15).
- , petrology of —, Mysore (1915—10, 93) (1649—9, 44) (937—7, 62).
- Pyrrhotite, in meteorites (1159—2, 17).
- , Kirana hills, Punjab (1854—12).
- , Travancore (298, 13, 30).

---

\* *See* Introductory Note—Supplementary List.

Quadrumana, Siwalik (66—1, 739) (292—10) (293—2) (562—6) (1109—15); —18, 33) (1406—20).

Quakes, Kolar gold-field (1652—9, 28).

Quartz, acicular inclusions in (859—30, 119; —31, 138).

———, bipyramidal crystals of ———, from Salt Range (859—2, 231).

———, crystals of ———, from Poona (1566—1; —2).

———, intrusive, Salem (988, 339) (859—30, 137).

———, modes of occurrence, in Ceylon (1368—3).

———, phenocrysts of ———, in rhyolite (1142—14, 107; —19) (1034—28, 79).

———, polysynthetic structure of ———, in gneissose granite (1142—8; 130; —33, 292).

———, in quartz felsite (1142—28).

Quartz-barytes rock, Salem (859—22).

Quartz-diorite, petrology of ———, Sutlej valley (1142—17, 67, 74, 83).

———, Wuntho, Burma (1311—18, 116).

Quartz-mosaic, in Malani rhyolite (1034—28, 82).

Quartz-norite, petrology of ———, Ceylon (356—1, 599).

Quartz-porphyry, petrology of ———, Mysore (1606—5, 153).\*

———, Pahang volcanic series (1933a, 456).\*

———, Tusham hill, Rajputana (1142—14, 106).

———, Sleemanabad, C. P., fluorite in (577—5).

Quartz reefs, Kolar, bedded character (1324—51, 82).

———, disposition (847).

———, origin (555—10).

———, S. India (987—24).

---

\* See Introductory Note—Supplementary List.



Quartz reefs, varieties of —, in Dharwar (1134—1, 75 ; —4, 124).

Quartz schist, Garhwal, effects of crushing in (1219—6, 27).

Quartz-trachyte, petrology of —, Aden (1142—9, 151).

Quartzite (Aravalli), petrology (1366—3, 262).

———— (Bijawar), petrology (1325, 58).

———— (Delhi), petrology (1142—14, 103).

————, (Dharwar), sedimentary origin (1548—12).\*

————, petrology of —, Kadur district, Mysore (1649—6, 9).

————, Salt Range boulder bed (1219—16, 35).

Quaternary, *see* Pleistocene.

Quetta-Pishin district, geology (708—4, 34) (148—73, 138).

————, sub-recent and recent deposits in (1324—38).

————, topography (1980—5).

Quilon, laterite at (228—20).

Quilon beds (288—13, 300) (987—26, 94, 99) (1197—68, 9) (298, 93).

————, age of (1854—33, 323).

## R

Radioactivity, of Archæan rocks, Mysore (1652b).\*

————, of hot springs, Tuwa, Bombay (1690b).\*

————, of rocks, Kolar gold-field (1899).

————, relative, of constituents of thorionite (223).

— Radiolaria, in Gondwanas, Madras (356—4).

————, tertiary, Nicobar Is. (536—2, Vol. I, 160).

Radiolaria beds, Malay Peninsula (1603—28).

Radiolarian ooze from Kilacheri boring, Madras (1280).

---

\* See Introductory Note—Supplementary List.

Raghavapuram shales, U. Gondwana (987—14, 57 ; —18, 218).

Raialo stage, Alwar series (730—2, 85) (1324—41, 69) (830—6, 23).\*

Raigarh-Hingir (Rampur) coal-field, artesian well in (1854—2, 77).

----- geology (71—13 ; —21) (987—30) (1466—1 ; —3).

Raipur district, Central Provinces, geology (987—32) (708—29, 4 ; —31, 36).

-----, igneous rocks (173—8).

-----, topography (1651).

Raised beach, Aden (348—3).

-----, Andaman Is. (1324—14, 144).

-----, Arakan Coast Is. (742, 433) (1159—13, 190).

-----, Ceylon (438—8, 12) (356—16).

-----, Kathiawar (569—6, 127).

-----, Perim, I., Aden (229).

Raised coral reefs, Ceylon (634—1).

-----, Minikoi I. (634—2, 26 ; —3, Vol. I, 30).

-----, Nicobar Is. (1487—1, 211 ; —2, 88) (846—1, 98).

Rajahmundry, Deccan trap at (987—18, 231).

-----, intertrappean beds at (540—2) (987—18, 232).

-----, fauna (844, 161, 175).

Rajahmundry sandstones, Godavari (897—14, 56 ; —18, 248) = Cuddalore sandstones.

Rajgir (Rajagriha) series, Bihar (1197—19, 42).

Rajmahal hills, geology (222—19) (1181, Vol. II, 165) (1326—6 ; —7, 618) (71—26).

-----, pot-holes in (570—21 ; —28) (71—30).

-----, sandstones from (1030).

-----, topography (615) (1625—9).

---

\* See Introductory Note—Supplementary List.

Rajmahal series (1326—8, 271 ; —23, 313) (71—26, 209).

—————, flora (1117—33, 52) (1329) (570—14 ; —46).

—————, affinities of (570—26 ; —29 ; —30).

—————, age of (481—2) (570—3 ; —8, 34).

—————, list of genera and species (570—2).

—————, Carnatic (596—5, 14 ; —8, 61 ; —13 ; —17, 49 ; —18, 147 ; —20, 197) (987—17, 171).

—————, flora (570—35).

—————, Cuttack (71—27).

—————, flora (570—19, 68).

—————, Godavari district (987—12, 150 ; —18, 211).

—————, flora (570—15).

—————, Madras, radiolaria in (356—4).

Rajmahal trap, petrology (1142—21, 104) (1219—0).

Rajpipla State, geology (173—23).

—————, nummulitic limestone in —, discovery (629—11).

—————, topography (1415) (1938).

Rajputana, geology (619—6) (1197—53).

————— of E. and N.-E. portion (917—1) (730—2 ; —5) (830—6).\*

————— of S.-W. portion (1701—2) (764—2).

————— of W. portion (148—50) (1324—16 ; —18 ; —25) (1034—28).

—————, origin of salt deposits (148—48, 93) (730—3, 202) (708—34, 19) (1034—28, 41).

—————, aeolian (860) (859—76, 233 ; —80).

—————, physiography (1131—2) (148—48) (99—2).

—————, Talchir boulder beds in (148—50, 13, 17) (1324—16 ; —28).

—————, topography and history (1788—1) (871).

---

\* See Introductory Note—Supplementary List.

Rajputana, *see also* Bharatpur, Malani, Udaipur, etc.

Rameswaram I., coral reefs (596—37) (1881—3).

—————, description (1784—2).

Ramgarh coal-field, geology (1935—2, 39) (71—2).

Ramghat, Sawantwari, geological section (1341—3).

Ramkola coal-field, geology (708—1).

Rampur (Raigarh) coal-field, *see* Raigarh-Hingir.

———— (Sarguja) coal-field, geology (71—53, 110).

Ramri I., Arakan, fossil fish teeth from (1109—23).

————— gastropoda from (595—2).

—————, geology (595—3) (1687—6) (1159—13; —14) (1369—11, 180).

—————, rock specimens from mud volcano in (1405—15).

—————, soils of (165—2).

'Rana diluvii testis' (fossil Batrachian, Cantor), notice of (279) (1117—27).

*Rana pusilla* Owen, from Bombay (1353—2) (1712—17).

Ranchi, neolithic implements from (1961—1).

Rangoon, alluvial deposits and subterranean water supply (1324—39).

—————, artesian wells at (1854—2, 62).

—————, laterite, composition (1405—52) (1932).

—————, pliocene fossils from (1406—5).

—————, river training works (221a).\*

Raiganj, analysis of deposit from water at (1326—68).

———— coal-field, fossil plants from (1435—1, 98) (570—9; —19, 70).

—————, geology (956—1) (557—1, 131) (866—1) (1935—1) (132—21, 148—7) (1869).

—————, mica peridotites in (173—10) (859—13).

—————, reptilian remains from (902—1) (148—9).

---

\* *See* Introductory Note—Supplementary List.

Raniganj stage (148—5 ; —7, 77).

—————, flora (570—19, 75).

—————, *see also* Damuda series.

Ranikot series, Sind (148—46, 11 ; —56, 166 ; —63, 37).

—————, age and classification (1854—19, 85 ; —20, 173 ; —35).

—————, corals (512—5, 26).

—————, echinoidea (513—1, 22).

—————, zonal distribution (1854—20, 186).

—————, gastropoda (368).

Ratnagiri, lignite beds at (450).

Ratnagiri district, geology (456—4) (1930) (596—14 ; —15).

Raub series, Pahang (1603—33, 349, 352).

Ravi R., description (235—13, Vol. III, 305).

Reaction rims, garnet-pyroxene (859—17, 21).

—————, olivine-felspar (859—18, 21) (1034—45, 60).

Red beds of Irrawaddy system (1311—22, 77, 79 ; —27, 105) (712, 45, 62) (1723—6, 279) (1369—11, 29).

Red beds series, Yunnan (211—19, 229).\*

Red clay, Nilgiri hills, nature and origin (110—1, 418) (348—2, 227).

—————, Shan plateau, origin (339) (1034—45, 322).

Red clay zone, Kohat (1975—15, 155).

Red earth, Burma, composition and origin (1369—7, 293 ; —11, 50).

—————, relations of —, with laterite (1372).

—————, *see also* Terra rossa.

Red earth beds, Ceylon, character and origin (1905—3, 103).\*

Red grit series, Afghanistan (708—12, 53).

—————, geological horizon (708—16, 95) (793—22, 34).

---

\* *See* Introductory Note—Supplementary List.

Red hills, Madras, boring for water (929).

Red marl, Salt Range, *see* Salt marl.

'Red marl formation,' Mysore, nature and origin (272—9).

Red sands, Vizagapatam (987—33, 147).

Red shale series, Son valley (1325—7).

Red soil, of southern India, origin (659).

Reg-i-Ruwan (Musical sand), Afghanistan (235—16; —17, 157) (1091—2, 537).

Regur (black cotton soil), colouration and composition (1951) (1849) (34) (773) (11, 111).

———, origin (1294—11) (321—2, 95) (288—13, 329) (1763—2, 298) (51—4).

———, Burma (1763—16, 229).

———, Central Provs. (1326—69, 80).

———, Southern India (1294—38, 252) (988, 352) (1881—1, 321).

———, Western India (228—17, 94) (148—22, 235; —37, 101).

Reh lands, Punjab (1888) (1332—2).

———, United Provs. (557—3) (1073—2) (630).

———, distribution of salts in (835).

———, reclamation (520) (1043—2) (1249—1) (776).\*

Reh salts, causes of growth (1197—4) (1621).

———, composition (1687—2) (1696—2) (215) (346) (1820—2) (1918) (655) (1892—18) (837).

———, manufacture of alkali from (1634a).\*

———, origin (1717—13) (1197—27, 12; —55) (295).

Rennell, Major J., biography (1173—17).

———, journals (1034—36).

Reptilia, fossil, Central Provs. (288—23, 204) (842—10).

———, of India, distribution (1109—24, 17; —39, 64; —75, 64).

\* *See* Introductory Note—Supplementary List.

- Reptilia, Maleri and Denwa series (1109—57).  
 ———, Panchet series (148—9) (902—1 to 3) (423—13).<sup>\*</sup>  
 ———, pre-tertiary, of India (1109—16).  
 ———, Siwalik (292—6 ; —7) (1109—64).  
 Rewa-Kantha district, geology and minerals (629—9) (288—15).  
 Rewah Gondwana basin, fossil flora (570—42, 182 ; —50).  
 ———, basin, geology (888—24 ; —29).  
 Rewah stage, U. Vindhyan (1326—12, 253) (1159—3, 62).  
 ———, classification (1854—17, 255).  
 ———, Bundelkhand (1197—2, 55).  
 Rewah State, geology, *see* Son valley.  
 Rhætic, Himalaya (708—20, 72 ; —24, 19) (486—39, 295).  
 ———, Shan States (1034—45, 284).  
 ———, fauna (798).  
 ———(?), Singapore (1603—7).  
 ———, Tirah, N.-W. Frontier (793—4, 104).  
*Rhagatherium*, note on genus (1109—11).  
 Rhinoceros, fossil; Siwalik Hills (561—16, Vol. I, 57).  
 ———, range in altitude of (561—16, Vol. I, 173) (1109—30, 182) (148—84, 374) (879—1, 160 ; —2, Vol. IX, 277).  
*Rhinoceros deccanensis*, Foote, described (596—10).  
 Rhinocerotidæ, Siwalik (1109—25).  
*Rhoptozamites*, note on genus (570—40).  
 Rhodochrosite, occurrence in India (577—32, 122).  
 Rhodonite, associated with braunite, Nagpur (1159—17).  
 ———, occurrence in India (577—32, 139).  
 Rhotas, *see* Rohtas.

---

<sup>\*</sup> *See* Introductory Note—Supplementary List.

- Rhyolite, Aden, petrology (1854—38, 325, 333).
- , Bawdwin mines, Shan States (1035, 240) (1034—45, 55).
- , petrology (211—20, 140).\*
- , Lobah, Garhwal, petrology (1219—5, 163).
- , Malani, petrology (1142—19) (1034—28, 78).
- , in Salt Range boulder bed (1219—16, 34).
- , Pahang volcanic series (1933a, 452).\*
- , Pavagad hill, Panch Mahals (577—12, 154) (96a—2, 93).\*
- , Tusham hill, Rajputana, polysynthetic quartz crystals in (1142—28).
- Richthofenia* Kays., systematic position (1859—14).
- Riebeckite, occurrence in Sikkim (859—6).
- , variety of —, from Mysore (1652—13).
- Rift theory, of Himalayan origin (239—7 to 9) (588—4; —5) (1324—71).
- River, deserted bed of —, in Rajputana desert (1131—2, 299).
- River, changes, Bengal (1034—43, 199) (794a).\*
- , Brahmaputra (1926—2, 320) (867—6, Vol. II, 253, 340).
- , Dhansiri R., Assam (1324—3, 238).
- , Gangetic delta (1473—2, 99; —3, 265) (576—1; —2) (1326—63) (43).
- , Harnai valley, Baluchistan (1324—32, 104).
- , Helmand (350—3, 715) (1465—2, 278) (1735, 678) (32—4, 13).\*
- , Hooghly (1316—2).
- , Indo-Gangetic plain (1087—2).
- , Indus (235—11, 356; —13, Vol. III, 318; —17, 3) (1421) (1958—2, 11; —3, 2) (1324—19, 323) (1463—4).
- , Irrawaddy (1134—7, 510) (211—10, 178).
- , Kosi (1626) (839, 468) (908, 401).

\* See Introductory Note—Supplementary List.



River-changes, Madras (596—5, 2 ; —20, 205).

———, Manipur (1324—3, 235).

———, Nam-Tu, N. Shan States (1034—20).

———, Sikkim (637—1, 22).

———, Sind valley, Kashmir (1324—66, 150).

———, Son valley (1461—2) (577—47).

———, Sutlej (1324—10, 332) (1323—2).

———, Tanjore (188—2, 181).

———, Thal-Chotiali, Baluchistan (1324—37, 27).

———, Tista (1181, Vol. III, 358).

River-discharge, Assam (767) (1871—17, 582).

———, Indus (399—5, 90) (836).

———, compared with that of Ganges (235—2).

———, Irrawaddy (1117—34) (677—3, 297 ; —6, 277).

———, Oxus (1955).

River-erosion, Ganges (1330—2) (1326—50) (1197—14) (1238).

———, Indus (836).

———, Irrawaddy (677—6, 283).

———, conditions of —, in India (1576—5) (1577—3).

———, laws of —, and transportation (1324—20 ; —34).

River gorge, Baramula, Kashmir, origin (1321—1, 24).

———, Dhauli R., Kumaon (713—2, 288).

———, Godavari R. (1534, 690) (937—18, 200).

River gorges, Afghan-Turkestan (708—13, 236).

———, Baluchistan, formation (148—73, 133) (708—26, 117) (1324—32, 102 ; —46, 182).

———, Nepal (1197—30, 99).

———, Sind valley, Kashmir (1324—66, 146),

River gorges, Sub Himalaya (1197—5, 158).

—————, Suleiman range (708—8) (1034—20, 79) (1140—2, 399).

River gravels, Dehra Dun (827—8).

—————, high-level, of Potwar, Punjab (880, 248).

—————, *see also* Pleistocene and Ossiferous gravels.

River system, Afghanistan (545, 108) (912, 767) (709—3, 807) (900—8, 604) (103—1, 7) (134—1, 258).

—————, Assam (1861, 127) (857—13, 381).

—————, Baluchistan (1055—2, 143) (708—26, 117).

—————, Burma (1987—3, 66) (83—3) (1172).

—————, Ceylon (438—8, 54) (1759, Vol. I, 40) (356—6 ; —9).

—————, Himalaya (1745, 416) (240, Pt. 3).

—————, evolution (1324—46, 185).

—————, Hindu Kush (1463—2, 320).

—————, Indian Peninsula (1294—38, 141) (1561—1, 13) (857—11, 142) (1256, 450).

—————, development (1324—46, 179).

—————, Kashmir (399—5, 82) (1109—38, 29).

—————, Nepal (849—4).

—————, Northern Shan States (1034—45, 15).

—————, Oxus basin (1987—8, lxviii).

—————, Punjab (1133).

—————, Southern India (1173—6 ; —11) (1534).

—————, Thian Shan (436—2, 95) (1211—2, 94).\*

—————, Tibet, eastern (359—2) (1987—7, 165) (476—1, 322) (1871—16 ; —17).

—————, western (1716—3, 7, 34) (1615—3).

—————, Turkestan (897—5).

\* See Introductory Note—Supplementary List.

River system, Yünnan (918) (211—10, 180 ; —13, 88 ; —19,\* 210).

———, tertiary, of northern India (1369—14)\* (1406—24).\*

River terraces, Assam (408) (669—10 ; —19, 39) (1134—2, 195) (211—5, 234).

———, Baluchistan (1324—37, 24).

———, Chindwin R., Burma (127, 256).

———, Dihing basin (1375—8, 33) (1034—7, 114).

———, Hazara (1975—24, 131).

———, Himalaya (1324—5, 197 ; —21, 150) (1034—43, 196).

———, Indus basin (1572—3, 131 ; —4, 200) (669—5, 384 ; —8, 350)  
(502—1, 455) (702).

———, Jhelum valley (1109—17, 30) (1321—1, 10).

———, Kangra (1669).

———, Kumaon (713—2, 292).

———, Naga Hills, Assam (669—20) (1324—3, 228) (1369—12, 262).

———, Nepal (867—6, Vol. I, 193, 241).

———, N. Shan States (1811—5, 121 ; —6, 126) (1034—45, 319).

———, Persia (897—2, 254).

———, Spiti (1712—5, 119).

———, Suleiman range (1985, 539) (1034—20, 94).

———, Turkestan (436—2, 49, 97) (897—1, 201).

———, Yünnan (29—2, 86).

River valleys, Himalaya, arrangement (849—5).

———, evolution (1324—43, —70).

River waters, Bombay, analyses (662).

———, India, temperature (1294—39, 129).

Rivers, Bengal, control of (401—3) (908).

———, survey (1034—36) (113) (1028) (1625—16) (840).

---

\* See Introductory Note—Supplementary List.

- Rivers, Indian Peninsula, variations in gradient (1854—18, 36)
- , Punjab, erosion and transportation of silt (1631—2).
- , geological features (1728).
- , survey (399—1) (102).
- , *see also* River system.
- , measurement of silt in suspension by (1280).
- , tendency of —, to erode western banks (677—8, 283).
- , transmission of waves by (1316—1) (1426—8).
- Road, Hindustan-Tibet (197—2) (387) (1591).
- Rock-basins, Kumaon (1324—4, 163).
- , Nepal (1197—39, 99).
- , erosion of (1324—1 ; —44) (1034—21
- Rock cisterns, Western India (1333).
- Rock decomposition, comparative action of sub-aerial and submarine agents in (859—27).
- Rock densities, Kolar gold-field (1652—14).
- Rock-salt, Punjab, chemical and microscopic examination (661—1).
- , origin, *see* Salt Marl.
- Rock sculpture by wind, *see* Deflation
- Rock weathering, Central Asia (1319—2).
- , in India (859—27 ; —28).
- , distinguished from alteration (1208).
- , *see also* Laterite, origin.
- Rocks, method of blasting —, in Assam (35—4).
- Rodents, Siwalik (1109—47 ; —51).
- Rohtasgarh, spiral impression on L. Vindhyan limestone from (96a—1).\*
- Rohtas stage, L. Vindhyan (424—1, 145) (1325, 19).

---

\* *See* Introductory Note—Supplementary List,

Rubies, in matrix, Burma (668).

Ruby, crystalline form of (473).

——, large crystals of —, from Burma (1016).

——, origin (208, 214).

Ruby Mines district, Burma, geology (208).

———, topography (677—4).

Ruminant, fossil, Perim I., Cambay (118) (1353—1).

———, Siwalik hills, allied to Giraffidæ (292—11).

———, pelvis of (1109—82).

Ruminants, crania of Indian tertiary (1109—12).

———, Siwalik (1109—47, 111).

Runn of Cutch, description (235—13, Vol. III, 319) (691—3, 318) (1145—5) (493—1; —3) (623—3) (148—37, 100) (569—6, 129).

———, origin (235—11, 569) (1975—8, 53; —11, 14, 99) (143—1, 238) (1645, 526).

———, oscillations of level in (35—61) (826) (1032) (1326—42, lxxii) (802).

———, visibility of objects on (629—6).

Rupshu, geology (1712—5, 122) (793—6).

## S

Sabzalkot, Dera Ghazi Khan, artesian boring at (1197—61, 236).

Sach Pass, Chamba, geological section (1142—3, 307).

Safed Koh, Afghanistan, geological specimens from (1197—56).

———, geology (709—4, 410) (708—21).

———, orography (1173—14, 41).

———, topography (1641) (1180, 629).

Sagaing range, Burma geology (1326—17, 325).

Sahyadri range, Bombay, geology (750),

Saighan series, Afghanistan (793—22, 30).

———, *see also* Plant-bearing series, Afghanistan.

Sakoli beds, Bhandara (71—28, 180).

'Salagram', origin of term (148—93) (1470—3, 257).

———, folk-lore connected with (1054).

Salem district, geology (1062—1; —2, 255) (272—2, 83; —10) (988) 1219—19;  
—20; —21) (859—30).

———, magnesite mines (234—2).\*

———, minerals (272—12).

———, quartz-barytes rock from (859—22).

———, topography (1048).

———, ultra-basic rocks of (1219—18).

Salem gneiss (596—39, 30).

———, petrology (1021—1; —2).

Salotekri beds, Chhatisgarh (987—32, 187)=Chilpi Ghat beds.

'Saline series,' Salt Range (1975—10, 82; —18, 70).

Salinity, of Hooghly water (1434—1).

———, of Salt Range lakes (1034—37, 48).

Salses, *see* Mud-volcanoes and 'Pungs.'

Salsette I., Bombay, columnar trap in (57).

———, geology (288—23, 171).

Salt, Madras, analysis (1193—2).

———, bituminous, natural gas in (1723—14).\*

———, manufacture of —, in Ceylon (199—1).

———, occurrence on joint planes (577—3).

——— of bitumen, *see* Silajit.

Salt craters, Karakash valley (1615—1, 97) (814) (815, 88).

\* *See* Introductory Note—Supplementary List.

## Salt deposits, origin (1460).

—————, Rajputana, origin (148—48, 93) (730—3, 202) (708—34, 19) (1034—28, 41).

—————, æolian (860) (859—76, 233 ; —80).

—————, Salt Range and Kohat, *see* Salt Marl.

Salt lake, Kathiawar (629—10).

—————, Ladakh, *see* Lake, Pangong.

## Salt lakes, Asia (1885).

—————, Calcutta, reclamation (1740).

—————, Ceylon (438—3 ; —7).

Salt marl, Salt Range (591—5, 239) (1763—1, 658) (1975—18, 70).

—————, composition (1892—30).\*

—————, eruptive character (591—6, 197) (1219—14, 26).

—————, geological horizon (1839—2, Vol. XXXVI, 22) (1975—40).

—————, secondary origin (1723—12).\*

—————, sedimentary origin (314—4, 252).

Salt pseudomorph stage, Salt Range (1975—18, 98) (1859—26, 110) = Bhaganwala stage.

Salt Range, Punjab, blödite from (1570) (1159—57).

—————, boulder bed, *see* Boulder bed, Salt Range.

—————, Cambrian (1975—18, 86 ; —21, 353) (987—12) (1219—14, 24) (1859—26, 89) (1311—15) (620—1).

—————, fauna (1859—26, 94) (1468) (1865).

—————, oretaceous, (1975—18, 103 ; —21, 361).

—————, fauna (1604).

—————, relations with jurassic (1006—3).

—————, dolomite, analysis (1892—19).

—————, eocene chelonia from (1109—74).

\* *See* Introductory Note—Supplementary List.

Salt Range, Punjab, erratics in (1763—25) (1975—18, 116).

—————, *Eurydesma* horizon in (1006—5).

—————, geological map (1326—74).

—————, sequence (1859—9) (1975—20 ; —39) (987—42, 154  
(620—4, 612).

—————, structure (719).

—————, geology (591—1 ; —4 ; —5 ; —6) (1763—1) (1572—5) (19, 291)  
(1839—2, Vol. XXXVI, 21) (1326—49) (1975—17, 125 ; —18)  
(1859—23 ; —26) (1219—14).

—————, glauconite from (1570) (1808—8).

—————, jurassic (591—5, 269) (1975—18, 101).

—————, correlation (1825—2, 587).

—————, langbeinite from (1159—58).

—————, occurrence of *Otoceras* in (1311—34).

—————, trilobites in (987—42).

—————, permo-carboniferous, *see* Productus Limestone.

—————, permo-triassic relations (1311—33 ; —38 ; —47).

—————, physical features (235—13, Vol. I, 51).

—————, potash salts (1723—11).\*

—————, red marl, *see* Salt marl.

—————, rocks from —, chemical and physical notes on (859—2).

—————, Siwalik beds, classification (793—28, 40).

—————, mammalia (1406—12).

—————, sub-recent and recent deposits (1006—2).

—————, Taconic system in (1171).

—————, topography (591—3) (8—1 ; —2, 131) (1892—15).

—————, Trans-Indus extension, geology (1975—28).

—————, Trias, *see* Ceratite beds.

\* *See* Introductory Note—Supplementary List.



Salt range, Punjab, Werfen beds in (1858).

Salween R., caverns on (35—65) (595—4, 273) (1156) (157) (568—1) (1755—6).

———, exploration (569—1) (1595) (1898).

———, sources (1871—16).

———, upper course of (728—1, 43) (134—3) (1871—20, 172) (752).

Salween valley, upper, physical features (711, 288) (1984, 160) (211—19, 212).\*

Samarskite, in Nellore (1787—7; —11).

'Samy stone' (Corundum), Nagpur (1405—40).

Sand, flotation of —, on Ganges (1907).

——, musical, Afghanistan (235—16; —17, 157) (1091—2, 537).

——, sculpturing of rocks by (1324—28).

Sand dunes, Afghanistan (673—4) (708—9, 59).]

———, Baluchistan (1143, 290) (1854—1, 215).

———, Bellary district (1294—12).

———, Cauvery delta (988, 249).

———, Central Asia (806—8, Vol. I, 311; Vol. II, 379) (436—2, 42).

———, Ceylon (968a).\*

———, Clifton, Karachi, origin and growth (1324—63).

———, Madras (596—8, 12).

———, Madura and Tinnevely (596—24, 87).

———, Nellore (987—17, 183).

———, Rajputana (148—48, 92; —50, 20) (99—2, 120) (1034—28, 37) (334).

———, Rameswaram I. (316—1, 131).

———, Seistan (1980—2).

———, Sind (924—3; —4).

———, longitudinal type of (623—3, 197) (99—2, 118) (1324—41, 456) (363a, 292).\*

---

\* See Introductory Note—Supplementary List.

- Sand dunes, Southern India (1294—38, 268) (1881—1, 322).  
 ———, Sundarbans (639).  
 ———, Travancore (596—25, 31) (1787—12, 188).  
 Sandoway, analysis of soils from (1263—1).  
 Sand-pits, Karakash valley, origin (814) (815, 88).  
 Sand-rock, tubular concretions in (1369—1, 247; —11, 34).  
 Sand-rock stage, Kumaon (1219—10, 82)=M. Siwalik.  
 Sandstone, Kurnool, chemical examination (1405—18).  
 ———, concretionary, from Sasseram (1625—2).  
 ———, fictitious vegetable impressions in (1666—9).  
 ———, jointing in (1197—23).  
 ———, Sub-Himalayan, petrology (1142—11).  
 ———, sub-recent, Ramswaram I. (1635, 10).  
 'Sandstone formation,' India (557—2).  
 ———, Nagpur (842—2, 69) (843, 352, 369).  
 Sandstone series, Henzada, Burma (1723—9, 249).  
 ———, Mikir hills, Assam (1657—2, 88).  
 Sandur State, geology (1294—10, 146) (596—34, Vol. XXII, 24; —39, 91).  
 ———, manganite from (652—2).  
 Sangar Marg, Jammu, geology (1034—9).  
 Sangeha, Kumaon, permian fauna (486—18, 62).  
 Sangla hills, Punjab, geology (830—2, 233).  
 Sanni, Sind, sulphur mines at (372—14).  
 Santal Parganas, geology (1117—33, 17).  
 ———, stone implements from (161—1; —2).  
 ———, *see also* Rajmahal hills.

Sapphire, analysis (996—3).

———, crystalline form (473) (190).

Sapphirine, Vizagapatam (1219—23) (1873, 2).

Saraswati R., ancient course of (1323—1; —2) (1133) (1324—10, 332).

Sarawan, Baluchistan, geology (354—2) (1854—36).

Sarguja, fossil plants from (570—41, 65).

———, topography (410—1, 22).

Sar-i-kol range, Pamir, physical features (806—2).

Sarikol series (793—34, 300).

Sasseram, concretionary sandstone from (1625—2).

Satpura coal basin, fossil plants from (570—36).

———, geology (584—2) (1197—26; —38, 69) (952—3).

———, *see also* Narbuda valley, Pench R. coal-field, etc.

———, underground temperatures in (1197—45).

Satpura range, topography (1484—2; —3) (607).

Sattivedu series (U. Gondwana), Madras (596—5, 14; —8, 66).

Saugor, Central Provs., remarkable deviation of compass near (1405—35).

Saugor district, geology (375).

———, intertrappean beds (288—17, 618) (1303—1).

———, fossil plants from (1117—32).

———, fossil wood from (1837—3).

———, mollusca (1687—4; —5) (1684—7).

———, palm tree from (1687—5) (1303—2).

Saurian, from Trichinopoly (147—5).

Saussurite, Kashmir (1863a—3).\*

———, Kuenlun range (1578—15; —17, 67).

---

\* *See* Introductory Note—Supplementary List.

- Saussurite-gabbro, jade mines, Burma (154—3, 264).
- Saxonite, Ladakh, petrology (1142—37, 311).
- Scapolite, Godavari district (1854—15).
- Scapolite-gneiss, Ruby mines, Burma (208, 199).
- , Salem (1021—2, 189).
- Scapolite-granulite, associated with Charnockite (859—31, 232).
- Scarps, fault, N. Shan States (1034—15, 21).
- , Vindhyan, origin (1159—3, 105).
- Schillerization, of pyroxenes (859—17, 24).
- , of quartz phenocrysts in rhyolite (1142—28, 11).
- Schist, fragments of —, included in granite (1142—15).
- Schistose rocks, Southern India (272—13).
- Schists, Dalhousie, age of (1142—4, 40).
- , alteration of —, in contact with granite (1142—8, 134).
- , in Gadag band of Dharwar (1134—4, 110).
- , Ganjam (1657—3, 154).
- , Garhwal, metamorphism of (1219—4, 136).
- , petrology (1219—6, 24).
- , Hazara (1219—17, 57).
- , Jade mines, Burma (88—1, 101) (154—3, 263).
- , Jhelum valley (1142—31, 263).
- , Karakoram range (170, 470, 476).
- , Mysore, Bangalore district (1606—2, 115).
- , Chitaldrug district (1548—6, 125).
- , Hassan district (1549—3, 33 ; —7, 50 ; —9, 82).
- , Kadur district (1549—11, 51).
- , Kolar gold-field (859—35, 75).

Schists, Mysore, Mysore district (1915—1, 82) (68—5, 147) (1450, 135).

———, Shimoga district (1649—4, 43 ; —10, 16) (1606—5, 140).\*

———, Narbada valley (1199—3, 130).

———, Salem district (859—30, 110).

———, *see also* Metamorphic rocks, Mica schist, etc.

*Schizoneura*, note on genus (570—19, 200).

Schlagintweit, A., last journey and death (1577—4) (1574—2, Vol. I, 42).

Scolecite, Poona, analysis (786—3, 114) (1394).

———, *see also* Poonahlite.

Scoriaceous mounds, Bellary, *see* Cinder mounds.

Soythian stage, Salt Range (1311—38, 448)=Ceratite beds.

'Sedaw limestone,' Burma (1034—26, 81).

Sediment, deposition of —, on Coromandel coast (523—2).

———, *see also* Silt.

Sedimentary rocks, Aden hinterland (1077, 318).

———, Karakoram range, petrology (351—5, 58) (170, 471).

———, Singapore (1603—7).

———, Thian Shan, petrology (666a, 267).\*

———, classification (148—76 ; —81).

Sehwan, crocodilian fossil from (1981).

Seismic instability, in India, causes of (462—2).

——— phenomena, in India, distribution (462—1, 656).

———, relation to geology (462—3).

———, *see also* Earthquakes.

Seismograph pillar, Colombo, periodic movements (73).

Seistan, geology (708—10, 282) (1854—37).

---

\* *See* Introductory Note—Supplementary List.

- Seistan, occurrence of *Chondrodonta bōsei* in Hippurite beds (1854—40).
- , physiography (350—3) (897—2, 276 ; —3) (806—13, Vol. II, 257).
- , topography (350—4) (103—2) (672—3, 70 ; —3, Vol. I, 255) (1465—2) (1095) (1140—3).
- Selangor, caverns in (1482—4).
- , geography (406, 370).
- , geology and mining industries (957—2).
- , tin mining in (1307).
- Selenite, Hamirpur district (1084—35).
- , Jhansi district (1632—2).
- , of unusual form, Pachpadra (577—4).
- Selenodont Suina, Siwalik (1109—37).
- Sembrong R., Fed. Malay States, exploration (1024).
- Semri series, L. Vindhyan (1197—2, 6, 9) = Sub-Kaimur and Son series.
- Seoni district, C. P., geology (1186) (577—24).
- , laterite (243—3).\*
- , supposed volcano in (197—1).
- , topography (1314—2).
- Seracs, Karakoram, formation of (1967—7, 84 ; —8, 290).
- Serendibite, Ceylon, characters and composition (1438).
- Sericite schist, Bihar, petrology (1142—20).
- Sericitoid phyllites, in Gondite series (577—32, 335, 680).
- Serpentine, Afghanistan, in bowenite (1142—20, 189).
- , Andaman Is. (1019—1, 36) (1159—42, 80) (1787—9, 204).
- , Burma, in Axial series (1763—12, 41 ; —16, 331) (1723—9, 252).
- , Jade mines (1311—23, 13) (88—1, 95) (154—3, 259).
- , Buzil pass, Kashmir (351—5, 41) (170, 468).

\* See Introductory Note—Supplementary List.

Serpentine, Dihing basin, Assam (1034—7, 114).

————, Ladakh (1142—37, 312).

————, Manipur (1324—3, 224).

————, Muscat (238—5).

————, Naga Hills, Assam (1369—12, 258).

————, Tochi valley, N.-W. Frontier (793—1, 63).

————, Tumkur district, Mysore (1915—3).

————, used as snake-stone (827—3).

Serpentinization, and rock-weathering (859—28,) (1208).

Seychelles, geology and laterite (88—7).

Shafts, working of deep —, *see under* Collieries.

Shahabad district, geology (1181, Vol. I, 510) (1625—5).

Shahkot hills, Punjab, geology (830—2, 233).

Shaktu valley, Waziristan, physical features (1985).

Shale series, Mikir hills, Assam (1657—2, 83).

Shali limestone, Simla, correlation (1142—1, 213).

Shan plateau, peculiarity in drainage of (339) (1034—45, 323).

————, physiography (1987—3, 87) (1980—1).

Shan States, permo-carboniferous fauna (486—38).

————, pleistocene deposits, *see* Lacustrine deposits.

———— (Northern), Devonian fauna (1470—2).

————, geology (1311—4) (424—3) (1034—26; —45 (1094a—2).\*

————, iron ore in (211—18).\*

————, jurassic brachiopoda (227—1; —2\*).

————, occurrence of Echinospærites limestone in (1311—3).

————, Ordovician and Silurian fauna (1470—1; —9; —10).

\* *See* Introductory Note—Supplementary List.

Shan States (Northern), productive capacity (760—6).

—————, rhætic fauna (798).

—————, topography (1909).

—————, (Southern), geology (569—1) (1219—22).

—————, graptolites in (953—3).\*

—————, monazite in (953—2).\*

—————, physiography (1962—2; —3).

—————, topography (1478—1) (1898) (740—2) (1729—1).

Shan-Tung, China, geology (1093).

Shapur coal-field, geology (1197—38).

Shayok R., glacier tributaries of (669—34).

—————, source of (451—5, 93).

Sheikh Budin, fossil plants from (570—41, 64).

—————, geology (369) (1839—2, Vol. XXXVI, 14) (1975—28, 282)

—————, jurassic fossils from (1839—2, Vol. XXXVI, 223).

Shells, fossil, *see* Fossil Shells.

Sherani hills, *see* Shirani.

Shevaroy hills, topography (745—2) (894—15) (364—2).

Shigar, Kashmir, geology (1109—26, 9).

—————, glaciation (1321—1, 77).

Shillong plateau, Assam, geology (1197—17).

—————, *see also* Khasi and Jaintia Hills.

Shillong series, (1197—17, 197) (1034—3, 198).

Shimoga district, Mysore, geology (1548—1) (1649—1; —3 to ; —10) (937—11).\*

—————, gold prospecting in (68—8).\*

Shingarh, Bannu, geological map and section (1839—1).



Shipke pass, Garhwal (647—1 ; —3) (648).

Shirani hills, N.-W. Frontier, geology (708—8) (1034—20) (1854—29, 251).

Shorapur, Deccan, geology (1751—2).

—————, perforated limestone from (1751—1).

Shorawak valley, Afghanistan (276).

Shwas ' (Mud avalanches), Baltistan (669—4, 27) ( 51—1, 132 ; —2, 291 ; —4  
323) (1966—1, 156 ; —6, 60) (1967—2  
684).

—————, origin of (1449—2, 545).

Shweli R., exploration (537) (509).

—————, upper course of (211—19, 210).\*

Shwezetau sandstone, Pegu system (372—11, 165).

Siam, notes on geology of (386—1) (1480—2).

—————, ruby and sapphire deposits (1094—2).

—————, tin deposits (1670, 525).

—————, visit to —, in 1838-39 (1478—5).

Siamese Shan States, topography (158).

Sibpur, Calcutta, Engineering Coll., Mining Dept. (1491).

Sibsagar district, Assam, topography (1954).

Sichel hills, Hyderabad, fossil shells from (1158—5 ; —7, 108 ; —8, 548).

Sikandarmalai stage, Madura (596—24, 12).

Sikaram, Safed Koh, ascent of (1641).

Sikkim, geology (1073—3) (867—6, Vol. I, 281) (1489—3, 235) (1625—12) (173—16)  
(637—3).

—————, hanging valleys in (637—2).

—————, lake district in (1755—4).

—————, ochreous soil from, analysis (1405—37).

—————, ore deposits of (577—55, exoi).\*

---

\* See Introductory Note—Supplementary List,

Sikkim, orography (687—1 ; —2) (1746) (624—3 ; —7 ; —11).

———, physiography (867—3 ; —4 ; —5, 235) (1578—1 ; —2 ; —4) (35—46) (624—4) (1986—9).\*

———, topography (749, Vol. II, 720) (267—5 ; —7 ; —8) (867—6) (1623—1) (148—31) (449) (1217) (173—14) (1863—4) (162) (1920—1 ; —3).

———, Kinchinjunga area (854) (722—3) (971).

‘Silajit’, characters and composition (1698—4) (1625—1) (1405—4) (868—1).

———, *see also* ‘Bit-Nobin.’

‘Siliceous limestone series,’ Salt Range (987—42, 157) (1859—26, 179)=M. Productus Limestone.

Sillimanite, Ceylon, optical characters (1202, 253).

Sillimanite-schist, Kalahandi (1872—3, 8).

———, Vizagapatam Hill Tracts, petrology (1873, 5).

Silt, composition of —, Hooghly R. (1405—2).

———, Sambhar lake (349—2) (1696—4) (1436—26).

———, deposition of oil on (1723—8).

———, measurement of —, held in suspension (1260).

———, origin of — Swath of No Ground (1117—11 ; —18).

———, quantity of — transported by Ganges (557—4 ; —6).

———, Hooghly (1405—50 ; —76).

———, Indus (235—17, 73) (1801—1 ; —2, 70) (1857, 318) (836).

———, Irrawaddy (1087—1).

———, utilization of (225—2).

Silting, in Gulf of Cambay (228—17, 99).

Silurian, Kashmir (1219—28, 211).

———, fauna (1470—8).

———, Shan States (1034—45, 125).

---

\* See Introductory Note—Supplementary List.

Silurian, Yünnan, fauna (1470—1, 90 ; —10, 66).

———, Spiti (793—9, 20).

———, fauna (1470—7, 123).

———, Yünnan (212, 334) (211—19 ; 225).\*

———, fauna (1470—11, 57).\*

———, fauna, distribution (1470—5, 26).

———, (?) slates, Karakash valley (1712—25, 14).

Simla, meerschalumite from (1518—1) (1584).

Simla district, Blaini beds and ' Central gneiss ' in (1142—1).

———, geology (1197—5, 32 ; —65, 130) (1324—21).

———, pre-tertiary sedimentary formations (1324—26).

———, supposed palæozoic fossils in (1854a).\*

———, triassic fossils from (724, 364) (793—42, 8).\*

Simla Hill States, geology (1142—17).

Simla slates (1197—5, 33).

———, geological horizon (1324—26, 134).

Simlaite (1584)=Meerschalumite.

Sind, coralliferous series in (512—6).

——, flint cores from (553).

——, geological map of (148—59) (1854—35, x).

——, geology (288—1) (1845—5) (623—1) (1270) (148—14 ; —46 ; —56 ; —63) (1276).

——, Orbitoides beds in (1854—26, 185).

——, physiography (235—15) (456—3).

——, rivers of —, see Eastern Narra, Indus, etc.

——, salt ' dhands ' of (148—48, 93).

——, springs in (79—1).

---

\* See Introductory Note—Supplementary List.

Sind, tertiaries, development and classification (1311—49) (1854—20).

——, tertiary corals (512—1; —5).

——— crabs (1712—22).

———, echinoidea (513—1).

———, fauna (418) (147—1) (569—4).

———, foraminifera (288—11; —22).

———, mollusca (368).

——— and post-tertiary freshwater deposits (1406—11).

———, *see also*, Siwalik, Sind.

——, topography (1152) (1310) (1418—2; —3; —4) (1026—1).

Sind valley, Kashmir, geological sections in (1109—13, 45) (1219—29, 138).

———, glaciation (1704—4) (1324—66).

Singapore, geology (1294—14, Vol. I, 266) (309, 303) (1085—3; —9) (1097—5).

———, igneous rocks of —, petrology (1603—12).

———, jurassic fossils from (1295—8).

———, obsidianites at (1603—38).\*

———, sedimentary rocks of (1603—7).

———, stone implement from (1482—1).

Singareni coal-field, geology (987—9; —28) (991—1) (1545—2).

Singhbhum district, geology (785—1) (1711—2; —4) (71—46, 113).

———, origin of ore deposits in (577—55, clxxxviii).\*

———, physical features (1711—3).

———, rock specimens from (41).

———, stone implements from (71—4; —12).

———, topography (1481—2).

Singhe La, Kashmir, nummulitic limestone (1777—3, 381) (1034—10).

---

\* *See* Introductory Note—Supplementary List.

Singpho hills, Assam, *see* Dihing basin.

Singrauli, natural products (1492).

Siphonotreta beds, Salt Range, *see* Neobolus beds.

Sipylite, Nellore (1787—14).\*

Sirban Mt., Hazara, geology (1839—2, Vol. XXXVI, 31)(1880).

Sirbu shales, U. Vindhyan (1159—3, 83).

Sirhind, levels in (65—6).

Sirmur State, geology (684—3).

—————, topography and productions (145).

Sirmur series (1198, 524) (1197—65, 131).

—————, geological horizon (1406—13, 188).

—————, microscopic structure of sandstone from (1142—11).

—————, in Kashmir (1109—7, 155 ; —38, 87).

Sironcha sandstones, (987—14, 61).

—————, flora (570—15, 190).

—————, geological horizon (842—9, 202) (987—19 ; —23, 252).

Sitabaldi hill, Nagpur, geological structure (1853—2).

—————, intertrappean beds (842—9, 199).

Sitaparite, characters and composition (577—28, 207 ; —32, 49).

Sitsayan shales, Burma (1763—16, 269).

—————, geological horizon (1723—6, 279 ; —9, 247).

—————, relations of —, to nummulitic series (1723—5, 262).

Sittang R., source of (83—2).

*Sivaelurus*, note on genus (1406—21).

Sivamalai series, Coimbatore (859—34).

*Sivatherium giganteum* Falc. and Caut. (562—1) (447—2) (345—4).

---

\* *See* Introductory Note—Supplementary List.

*Sivatherium giganteum*, osteological characters (226—3).

———, systematic position (644—1 to 3) (1271).

———, zoological relations (1248).

Siwalik beds, Bhutan Duars (669—7) (1406—6, 23).

———, China and Japan (1109—42).

———, Garo Hills, Assam, mammalia from (1389).

———, Kohat (716) (1975—15, 165).

———, Kushalgarh, Punjab (635) (561—16, Vol. I, 414).

———, Perim I., Cambay, *see* Ossiferous conglomerate.

———, Punjab, chelonia from (1763—23 ; —29).

———, Seistan (1854—37, 217).

———, absence of —, in western Bhutan Duars (669—10) (1159—6, 48).

Siwalik conglomerate, conditions of deposition (1406—24).\*

———, distorted pebbles in (1219—7).

———, petrology (1219—10, 79).

Siwalik hills, *Anoplotherium* from (562—7).

———, *Colossochelys atlas* from (562—8).

———, discovery of organic remains in (561—2 ; —4 ; —5) (345—2) (1111) (670).

———, *Felis cristata* from (562—4).

———, fossil antelope from (65—7).

———, anthropoid ape from (1109—15).

———, camel from (65—4) (447—1 ; —2) (518—2) (562—3) (1109—63).

———, Camelidae of (292—12).

———, crocodile from (292—6 ; —7).

———, elephant's tooth from (65—1).

———, elk from (65—2).

---

\* *See* Introductory Note—Supplementary List.

Siwalik hills, fossil hippopotamus from (562—2).

————— localities in (292—3) (1324—7).

————— monkey from (293—2).

————— quadrumana from (292—10) (562—6).

————— ruminant from (292—11).

—————, freshwater deposits of (1406—13, 192).

—————, *Mastodon* from (292—8 ; —9).

—————, structure of (1435—1) (292—5) (1717—8, 295) (561—ie, Vol. I, 30)  
(1197—5) (1219—10).

—————, *Ursus sivalensis* from (562—5).

Siwalik period, climate of (557—9).

Siwalik system (1197—3, 28 ; —5, 14, 101).

—————, avifauna (1109—19 ; —30, 68 ; —48) (434).

—————, basal beds of (1406—23).\*

—————, chelonia (1109—55 ; —80 ; —81).

—————, classification (1763—34) (1406—13, 189).

—————, conditions of deposition (1197—3, 28 ; —10, Vol. XXIV, 45).

—————, correlation with mammal horizons of Europe (1406—16).

—————, crocodilia, etc. (1109—64).

—————, fauna of —, character and age (561—8) (1197—6) (148—61 ; —66 ;  
—75, 694).

—————, distribution (1763—34, 108) (1109—4 ; —52).

—————, fish remains of (725) (1109—30, 63 ; —65).

—————, mammalia (65—3) (160) (561—16, Vol. I) (1109—10 ; —14 ; —18 ;  
—35 ; —66).

—————, antelopes (1109—61).

—————, bunodont Suina (1109—46).

—————, Camelopardidæ (1109—32).

---

\* See Introductory Note—Supplementary List.

Siwalik system, mammalia, Carnivora (66—2) (173—1 ; —3) (1109—27 ; —44 ; —51).

\_\_\_\_\_, Equidæ (1109—31 ; —45).

\_\_\_\_\_, molar teeth (1109—2).

\_\_\_\_\_, Primates (1406—20).

\_\_\_\_\_, Proboscidea (562—9) (1109—21 ; —45).

\_\_\_\_\_, Rhinocerotidæ (1109—25).

\_\_\_\_\_, Rodentia (1109—47 ; —51).

\_\_\_\_\_, Ruminants (1109—12 ; —47 ; —82).

\_\_\_\_\_, selenodont Suina (1109—37).

\_\_\_\_\_, mollusca (292—3, 593) (561—16, Vol. I, 389) (1109—36, 106).

\_\_\_\_\_, vertebrata, coll. Ashmolean Society (226—4).

\_\_\_\_\_, coll. Asiatic Society of Bengal (1436—26) (439—2) (563) (160).

\_\_\_\_\_, coll. British Museum (1109—77).

\_\_\_\_\_, coll. Dadupur Museum (65—3) (66—1) (439—8).

\_\_\_\_\_, coll. Falconer and Cautley (293—1).

\_\_\_\_\_, coll. Indian Museum (1109—20 ; —63).

\_\_\_\_\_, coll. Ludlow Museum (65—9).

\_\_\_\_\_, coll. Science and Art Museum, Dublin (1109—54).

\_\_\_\_\_, history of (1109—24).

\_\_\_\_\_, synopsis (1109—39 ; —47, 122 ; —75).

\_\_\_\_\_, Assam (1197—9, 435) (1134—2, 191).

\_\_\_\_\_, Baluchistan (708—4, 15 ; —26, 124) (1324—82, 98 ; —38, 36).

\_\_\_\_\_, *see also* Miocene.

\_\_\_\_\_, Darjiling district (1598—1) (1326—7 ; —9) (1159—6, 45).

\_\_\_\_\_, Jammu (1197—41, 53) (1109—38, 83).

\_\_\_\_\_, Nepal (1197—39, 94).



Siwalik system, Punjab (1975—17, 119) (1763—34).

———, classification (1406—16, 273) (793—28, 40).

———, mammalia from (1109—1 ; —10 ; —14 ; —18).

———, section on Indus R. (1859—15 ; —23, 16).

———, Sind, *see* Manchar series.

———, Suleiman range (143—73, 160) (708—8, 189).

Siwalik unconformity (1197—7 ; —60 ; —65, 119) (1219—10, 182).

Siwana granite, Rajputana (1034—28, 24, 90).

Skardu, physiography (1321—1, 63).

———, topography (1846—4, Vol. II, 243).

Slag, crystallised, from Kulti, Burdwan (423—6).

Slate, alteration of —, in contact with granite, Dalhousie (1142—8, 133).

———, Bijawar, in Son valley (1325, 64).

———, fragments of —, included in granite, Dalhousie (1142—15, 169).

Slate series, Chitral (793—34, 282).

———, Hazara (1219—17, 10).

———, Kashmir (1109—22, 56).

———, *see also* Attock slates, Simla slates, etc.

Slate zone, Hazara (1219—17, 88).

Slates, Kurnool, absence of cleavage in (1326—29).

———, ? Silurian, Karakash valley (1712—25, 14).

Smooth-water anchorages, *see* Mud banks, Travancore.

Snake-stone, examination of (438—4 ; —6) (1941—1) (827—3).

Snow fall, in Pamir (806—1, 304).

Snow line, in Himalaya (337—3) (892—2 ; —7) (18, 70) (900—7 ; —9) (917—2)  
(88—4) (401—2) (1717—5) (1576—6, 279 ; —9, 369) (1745, 409).

Soda, analysis of —, from India (683).

Soda, analysis of—, *see also* Reh salts.

Sodalite, from Kishangarh State (1854—3) (403) (859—59).

Sodalite-syenite, Kishangarh, petrology (1854—4).

Sohagpur coal-field, geology (888—29, 177).

Soil, acid, from Assam, composition (1200).

—, black cotton, *see* Regur.

—, high temperature of —, at Suyam, Kashmir, *see* Suyam.

—, ochreous, from Sikkim, analysis (1405—37).

—, red, of S. India, origin and formation (659).

Soil-cap, fissuring of, Travancore (298, 91).

———, movements of (71—57) (1324—21, 149).

Soils, absorption of lime by (1891a).\*

—, alkaline, *see* Reh.

—, analysis of —, Arakan (165—2).

———, Assam (1117—7, 29).

———, Bengal (1244).

———, Bombay Presidency (342).

———, Bundelkhand (1818).

———, Burma (1511—3).

———, Buxar (1436—14).

———, Cachar (848).

———, Ceylon (886).

———, Cheduba I. (1405—7 ; —8).

———, Coorg (1188).

———, Himalayan (561—8).

———, Hyderabad, Sind (238—1).

---

\* *See* Introductory Note—Supplementary List.

Soils, analysis of—, India, etc. (1405—5; —6) (1043—3).

—————, Madras Presidency (834—2, 1).

—————, Navanagar State, Kathiawar (11, 111).

—————, Nepal (268).

—————, Punjab and Afghanistan (912, 869).

—————, Sandoway (1263—1).

—————, Son valley (1325, 32).

—————, Straits Settlements (1097—3).

———, deliquescent salts in (272—15).

———, distribution of —, in Gorakhpur district (1073—1).

Solon, supposed discovery of palæozoic fossils at (793—39, 11; —42, 8)—*see also* Simla.

Son R., beheading of —, by Hasdo R. (577—47).

———, changes in course of (1461—2).

Son series, L. Vindhyan (1854—17, 258).

Son valley, Rewah, geology (1159—3, 29) (424—1; —2) (1325).

—————, physical features (867—1, 383).

—————, Vindhyan outliers in (1324—49).

Son-Narbada region, Jabalpur flora of (570—10).<sup>1</sup>

Soolimanite, *see* Suleimanite.

Soundings, off Barren I. and Narcondam (1159—48).

South Arcot district, cretaceous in (147—8).

—————, topography (636).

South Mahratta country, geology (313—1) (1294—23, 936; —32, 1000; —41 (596—12).

South Mahratta country beds ' (1294—38, 159)=Kaladgi system.

South Rewah coal-fields, geology (888—24; —26 to 29).

————— fossil flora (570—42; —50).

Southern India, *see* India, Southern.

Spandite, composition and occurrence (577—32, 179).

Specific gravity, of rocks, Kolar gold-field (1652—14).

Speckled sandstone, Salt Range (1975—18, 90).

—————, correlation (1892—14) (1311—38, 424).

—————, fauna (1859—26, 112).

Spessartite, occurrence in India (577—14, 83 ; —32, 168).

Sphene, acicular inclusions of —, in garnet (859—16).

*Sphenophyllum*, remarks on genus (570—37).

Spheroidal jointing, in metamorphic rocks (71—37).

Spherules, ferruginous, in Vindhyan sandstone (1405—27)

Spinel, Ceylon, analysis (1038—1, 183) (640, 313).

—————, blue variety of (88—2) (1202, 259).

—————, matrix of (448—3).

—————, Ruby mine, Burma (208, 211).

—————, Travancore, micro-section (1183, 8).

Spinel-bearing rocks, Vizagapatam Hill Tracts (1873, 4).

Spintangi series, Baluchistan (1324—32, 96 ; —37, 23).

—————, correlated with Kirthar series (1854—20, 181).

*Spirifer curzoni* Diener, note on (793—8).

Spiri, Cambrian fauna of (1470—4).

—, discovery of fossil shells in (650—2 ; —3, 276).

——, fossils from —, coll. Gerard (557—7) (1326—37) (147—9 ; —14).

—————, coll. Schlagintweit (1337—1 ; —2).

——, geological exploration (900—1 ; —3 to 5) (1712—1 ; —7).

—————, sequence in (708—19 ; —20, 194 ; —32, 44) (793—9, 103).

——, geology (1712—5, 16) (1142—2) (1324—27) (793—6 ; —9).

- Spiti, permo-carboniferous fauna (486—14 ; —18, 133 ; —42).  
 —, supposed former lake in (900—5, 206, 216) (1159—1, 157).  
 —, topography (647—1) (35—62) (650—3) (790) (1763—4) (763—1 ; —2).  
 —, triassic fauna (486—29 ; —33) (1011).  
 ——— sequence (1010—2 ; —4).  
 ———, *see also* Himalaya, Trias.
- Spiti conglomerate, correlation (793—17, 262).
- Spiti granite, petrology (1142—13, 54).
- Spiti shales (1712—5, 85) (793—6, 195 ; —9, 85).  
 ———, age and correlation (1712—15) (1308) (1825—2).  
 ———, Dr. Gray's type specimens of ammonites from (388—1).  
 ———, fauna (1712—5, 86) (1825—1) (1691).  
 ———, Cent. Himalaya (708—20, 75 ; —24, 20) (486—5, 582).  
 ———, Cent. Tibet (1311—46) (793—11, 163 ; —12, 156).  
 ———, Hazara (1975—24, 125) (1219—17, 29).  
 ———, Nepal, fossils from (859—70) (1470—3).
- Spodumene, Padar, Kashmir (1034—14, 65).
- Springs, Bhagalpur district (222—18).  
 ———, Kangra, iodine and bromine in (1168—4 ; —5).  
 ———, Kashmir (1041, 22).  
 ———, Punjab (1572—5, 289).  
 ———, Sind (79—1).  
 ———, freshwater, Persian Gulf (288—21, 361).  
 ———, intermittent, Kashmir (1009).  
 ———, Rajapur, Bombay (1165).  
 ———, 'Talpargi,' Mysore (555—3) (1606—3).  
 ———, temperature of —, in India (1294—39).

Springs, temperature of —, Trivandrum (397—6).

———, *see also* Hot springs.

Spring waters, Bombay, analyses (662).

Spring-wells, in Gangetic alluvium (913—1) (1854—2, 8).

Sriperumbudur (Sripermatūr) series, U. Gondwana (596—5, 15 ; —8, 100).

———, *Eryon cf barrovensis* McCoy from (570—20).

Srisaïlam quartzite, Cuddapah (987—7, 252).

Stegoccephalia, triassic (203a).\*

*Stegodon ganesi*, Falc. and Caut., description of cranium (1109—3).

———, occurrence in Jammu (1863a—1).\*

Steel, Indian, *see* Wootz.

———, modern manufacture of —, in India (1150a).\*

Stilbite, in gneiss, W. Bengal (71—36).

———, Narbada valley (786—1).

———, W. India, composition (786—6, 224 ; —8, 113).

———, new faces observed on (1159—35).

Stinkstone, Gilgit, petrology and age (1142—36, 351, 361).

Stoliczka, F., biography (71—64).

*Stoliczkania*, Duncan, systematic position (512—7).

Stone, perforated, from Jubbulpore (283).

Stone age, in Ceylon (1557—1 to 3) (1905—3).\*

———, in India (147—16) (1084).

———, *see also* Implements, stone.

Stone circles, Nagpur (1490—1).

———, Yusufzai, N.-W. Frontier (1397—3).

Stone implements, *see* Implements, stone.

---

\* *See* Introductory Note—Supplementary List.

Stone monuments, *see* Monuments.

Straits Settlements, native antimony from (1326—87).

———, production of tin (155).

———, soils of (1097—8).

———, tin mining in (1563).

———, topography (1294—14) (1085—1).

———, *see also* Pinang, Singapore, etc

Strata, classification of sedimentary (148—76).

———, faults in (1197—20).

Stratification, of glacier ice (1034—38, 56) (1967—7, 94).

Strontianite, in Las Bela (1854—7).

Strüverite, in Federated Malay States (391—1) (1603—29).

Subansiri R., Assam, exploration (407—1).

———, permo-carboniferous fossils from (1134—2, 186) (486—20).

———, supposed connection with Tsang-po (669—23).

Subathu, discovery of ossiferous beds near (1845—4 ; —5, 349).

———, geology of neighbourhood (684—4) (1845—7).

Subathu series (1197—3, 23 ; —5, 11, 74).

———, geological horizon (1854—20, 177).

———, in Kashmir (1197—41, 53) (1109—88, 90) (1034—9) (1640—3, 194).

———, in Punjab (1109—7, 156).

Sub-Himalayan system (1197—3 ; —5, 10, 74 ; —27, 13) (240, 209).

———, limits of deposition (1197—5, 81) (1219—10, 177).

———, micro-structure of rocks (1142—11).

———, Jammu (1197—41).

———, Kumaon (1197—65, 118) (1219—10 ; —12, 216).

———, Punjab (1197—81, 44).

Sub-Himalayan system, *see also* Siwalik system.

Sub-Himalayan zone, inclination of thrust plane in (1219—34).\*

Sub-Kaimur series (1326—12, 253) (1197—2, 5)=L. Vindhyan or Son series.

—————, Narbada valley (1199—3, 138).

Submerged forest, Bombay (1343) (1209) (1034—47).\*

—————, Valimukkam, S. India (596—24, 82).

'Sub-metamorphic formation,' Shan States (1311—4, 103).

Sub-metamorphic series, *see* Dharwar and Transition.

Sub-Nummulitic series, Cutch (1975—8, 56 ; —11, 66).

Subrobustus beds, Himalaya (486—5, 548)=Hedenstroemia beds.

Subsidence, in Runn of Cutch, June 1845 (1284).

—————, recent, in Assam valley (1134—2, 197).

Subsoil water reservoirs, in United Provs. (1238—2)\* (899a).\*

Suidæ, from Bugti hills, Baluchistan (1406—9).

Suina, Siwalik and Narbada (1109—37 ; —46).

Sukkur, Sind, flint-cores from (1822—2) (148—45).

Sulacutus beds, Spiti shales (486—5, 584).

Suleiman range, geology (591—7) (1839—2, Vol. XXXVI, 18) (71—19) (148—78, 130) (708—8) (1034—20) (1854—29).

—————, Orbitoides beds in (1854—26, 184).

—————, topography (1463—1) (1140—1).

Suleimanite, Kashmir (1839—2, 120).

'Sulgrances,' *see* Salagram.

Sullavai series, Godavari basin (987—23, 227).

Sulphur, in Ceylon (1335).

—————, in Mesopotamia (1369—16).\*

—————, Sind (372—14).\*



Sumeru Parbat, ascent of (1494).

Sundarban, ancient maps of (1452—2).

———, description of (749, Vol. I, 123) (653) (896—2, Vol. I, 285) (1579).

———, former condition of (120—1).

———, history (156—1 ; —3, 226).

———, origin (639) (1452—1) (1326—63).

———, physical features (1453).

Sungie Ujong, Malacca, topography and geology (1294—3).

Surat district, geology (1975—5).

———, water-bearing strata in (143—44).

Suru, Kashmir, geology (1109—26, 19).

Survey of India, history (1173—4) (1871—12).

Sutlej R., ancient course of (1324—19, 332) (1323—2).

———, breadth and velocity of —, in plains (1862—2).

———, lower course of (1131—1).

———, source of (1661, 121) (806—9, Vol. II, 178).

———, upper course of (1716—1) (1717—15) (755).

Sutlej valley, geology (337—4) (900—5) (1197—5, 48) (1142—17) (1324—27, 150).

———, igneous rocks from —, petrology (1142—1, 214 ; —13, 55 ; —17, 72 ; —32).

———, physical features (1712—14) (806—9, Vol. III, 239).

———, topography (827—2) (649) (138).

——— (upper), lacustrine deposits (1573—3, 121) (1464—2, 280).

———, *see also* Hundes.

Suyam, Kashmir, high temperature of ground at (1846—4, Vol. I, 280) (561—16, Vol. I, 567) (1041, 42) (1009, 11).

Swallow-holes, Naini Tal (1219—12, 220).

———, Shan plateau (339) (1034—45 23).

Swat, geology (793—34, 275).

——, topography (1463—3).

Swatch of No Ground, influence of —, on currents and tides (547).

——, origin (1117—13) (309, 341) (286—1).

——, silt from (1117—11).

——, soundings in (1781).

Syenite, *see* Elæolite —, Nepheline —, etc., syenite.

Sylhadrite (Sylhedrite), characters and composition (1618—2).

Sylhet, alluvium in (1197—17, 158).

——, limestone from (383—1).

——, topography (587—2).

Sylhet trap, age of (1197—9, 418 ; —17, 183).

Syncline, in Makum coal-field (1640—9).

Syringospharidae, structure of (512—4 ; —10).

Syringothyris limestone, Kashmir (1219—28, 217).

Szechenyite, characters and composition (1013—2, 348).

Sze-chuan, W. China, topography and geology (476—3) (660).

## T

Taconic system, in Salt Range (1171).

Tadpatri (Tadaparti) slates, Cheyair series (987—7, 181).

Teniopteridae, in Damuda series (579—2").

Tagling limestone, Spiti (1712—5, 6<sup>th</sup>) (793—9, 87).

Tagling stage, liassic (240, 236).

Tahan range, Malay Peninsula, *see* Gunong Tahan.

Taiping, Perak, geology (1603—1).

Takht-i-Sulciman, description (1140—1) (857—9, 72).

Takht-i-Suleiman, geology (708—8).

'Takli series', Nagpur (842—9, 200)=Intertrappean beds.

Tal beds, Garhwal (1197—5, 69) (1324—8, 161) (1219—1; —3, 36; —10, 130) (240, 215).

Talevadi, Dharwar, formation of laterite at (1134—5).

Talchir boulder-bed, (150, 47) (148—80).

—————, compared with Permian breccias, England (1324—45).

—————, correlation (1859—19, 34).

—————, equivalents in Africa and Australia (148—78) (1324—15, 42).

————— Urals (1810, 132).

—————, glacial origin (148—40) (569—3) (147—21).

—————, in Rajputana (148—50, 13, 17) (1324—16, 123; —25).

—————, Sarguja (708—1, 142).

—————, Warangal, Hyderabad (987—8, 51).

Talchir coal-field, geology (150).

Talchir ice age, *see* Glacial Period, palæozoic.

Talchir series (150, 47) (148—35, 57).

—————, conditions of deposition (888—7, 331).

—————, correlation (1326—23, 307) (1197—75, 2) (1810, 116).

—————, flora (570—8, 78; —45).

—————, Central Provs. (148—33, 303, 321) (888—20, 15) (577—46, 167).

—————, Chhatisgarh basin (987—32, 191).

—————, Godavari basin (888—22, 18).

—————, Jharia coal-field (888—1, 233).

—————, Karanpura coal-field (888—7, 294).

—————, flora (570—47, 243).

—————, Karharbari coal-field (888—3, 217) (1545—3, 89).

—————, flora (570—42).

Talchir series, Palamau (888—9, 331) (71—32, 38).

—————, flora (570—47, 251).

—————, Rajmahal hills (71—26, 175).

—————, Rampur coal-field (71—13, 102 ; —21, 103) (1466—3, 93).

—————, Raniganj coal-field (148—7, 32) (1869, 228).

—————, Satpura basin (1199—3, 146) (1197—21, 65 ; —22, 67 ; —26, 163 ; —38, 80) (952—3, 14).

—————, South Rewah (888—24, 126, 311 ; —29, 148).

Talchir State, topography, etc. (994—4).

' Talpargi ' springs, Mysore (555—3) (1606—3).

Talus deposits, Salt Range (1006—2).

—————, upper Indus valley (502—1, 443).

—————, fans, Baluchistan (1854—1, 188, 211).

—————, Kangra (1763—20).

Tanawal (Tanol) series, Hazara (1975—24, 122 ; —29, 316).

—————, in Kashmir (1975—32, 166).

Tanjore district, cretaceous beds in (1854—39) (793—24, 64).

—————, geology (596—18).

—————, physiography (188—2).

—————, topography (1837).

Tapti R., survey of (532).

—————, valley, geology (148—22).

' Tara sandstone ' (288—13, 207) Kaimur sandstone.

Tarcherla sandstones, Kamthi series (987—14, 61) (888—22, 24).

Tarikere series, Mysore (1549—12, 124).\*

Tarim basin, eocene fauna (1725, 463).

—————, physiography (806—8, Vols. I and II).

---

\* See Introductory Note—Supplementary List.

- Tarkeshwar, Surat, nummulitic limestone at (1507—1).
- Tarurite (pyroxene schist), petrology (1915—9, 3).
- Tata Iron and Steel Works, origin and development (1810a).\*
- Tatapani coal-field, geology (708—1).
- Tatticooti Mt., Pir Panjal, ascent of (1292—1).
- Taungtha hills, Burma, structure and age (372—3).
- Taungyi hills, Burma, *see* Yenangyat oil-field.
- Tavernier, Jean Baptiste, travels in India (71—67).
- Tavoy district, Burma, cassiterite deposits (211—22).\*
- , geology (35—32) (154—4).
- , native map of (222—12).
- , ore minerals of (275—3).\*
- , topography (1097—4) (1340—8) (1670, 407).
- , tungsten and tin ores in (211a, 105)\* (1192a).\*
- , wolfram-bearing quartz lodes in (211—21).\*
- , *see also* Tenasserim.
- Tawmawite, jade mines, Burma (154—1, 354 ; —3, 268).
- Tawng-Peng system, Shan States (1034—45, 45).
- Teeth, of *Dissopsalis* Pilg. (1406—18).
- of fossil fish, from Pegu system (1723—7).
- Ramri I. and Punjab (1109—23).
- , of *Mastodon*, from Siwalik hills (292—8).
- , molar, of Elephant and *Mastodon* (561—11 ; —16, Vol. I, 69).
- , of tertiary and post-tertiary mammalia (1109—2).
- Tehri Garhwal, geology (1219—3, 28).
- Tellurium, from Kyaukpazat, Burma (1094—3).

---

\* *See* Introductory Note—Supplementary List.

Tembeling series, Malay Peninsula (1603—7 ; —8).<sup>3</sup>

Temperature, decrease of —, in thermal springs, India (1294—30).

————, of glacier ends, Himalaya (1578—9).

————, ground, Indian Peninsula (1572—3, 101) (1576—2, 58).

————, Punjab (1576—3, 213).

————, at Trivandrum (259) (600).

————, high —, of ground at Suyam, Kashmir, *see* Suyam.

————, of springs, wells and rivers, in India (1294—39).

————, of wells, Indo-Gangetic plain (557—11 ; —12 ; —15).

————, Trivandrum (397—6).

————, underground, Satpura coal-fields (1197—45).

————, uniform, of wells in Bengal (914).

Tenasserim, Burma, geology (1340—2) (1326—13) (173—18).

————, granite in (173—17).

————, monazite in (830—4).\*

————, permo-carboniferous fossils from (1311—12).

————, rocks and minerals from (1076—1) (808—2) (625—8 ; —9).

————, topography (808—5 to 7) (1139—3) (809, Vol. II, 62).<sup>1</sup>

————, *see also* Mergui and Tavoy.

Tendau series, Tenasserim (173—18, 152).

'Terai', definition and origin (1197—27, 11).

————, drainage and irrigation (1769).

————, Kumaon, description (86—3).

————, geology and botany (1151—3 ; —4).

————, Nepal, geology (867—8, Vol. I, 377).

'Terra Rossa', origin (1719).

---

\* *See* Introductory Note—Supplementary List.

Terraces, lateritic, in Bellary (596—39, 178).

———, see Lake and River terraces.

Terminology, Indian geological (864a).

Terribles, Bay of Bengal, sandstone bored by *Teredo* from (1117—18).

Tertiary, Afghanistan (708—18, 100) (793—22, 37).

———, Afghan-Turkestan (708—13, 254).

———, Andaman Is. (1787—9).

———, Assam (1197—17, 159) (1134—2, 188).

———, flora (1610—5).

———, Baluchistan, freshwater deposits (1406—11).

———, Baroda State (596—40, 65).

———, Bokhara (1010—1).

———, Burma, classification (111—22 ; —36 ; —37) (1735—35) (1723—5 ; —6 ; —9) (1369—11, 13).

———, geological structure (372—13).\*

———, vertebrata (226—1) (327) (1406a).\*

———, Cutch (1975—8, 57 ; —11, 74).

———, echinoidea (513—2).

———, Gujarat (1763—27, 9).

———, Hazara (1975—24, 126) (1219—17, 38).

———, India, evolution of recent molluscan fauna in (1854—43).

———, fossils from (62).

———, freshwater deposits, classification (1406—13 ; —24,\* 91).

———, succession of marine faunas in (1854—50).\*

———, Kashmir (1109—38, 81).

———, Kathiawar (569—6, 107) (11, 127).

———, echinoidea (513—2, 80).

---

\* See Introductory Note—Supplementary List.

Tertiary, Kumaon (1219—10).

———, Lushai hills (1034—17).

———, Mayurbhanj State (173—20, 167 ; —22) (1787—2).

———, Nicobar Is. (1487—2, 41) (846—1, 88) (71—10).

———, foraminifera (1592).

———, radiolaria and algæ (536—2, 160).

———, Persian Gulf (148—34 ; —36) (1406—10, 17).

———, Pondicherry (398) (1067—1, 148).

———, Punjab (1845—6) (1839—2, 103) (1975—12 ; —13, 66 ; —17 ; —21, 363)  
(1859—15) (1406d—1).\*

———, Sind (1845—5) (623—1) (148—14 ; —46 ; —56, 166 ; —63, 37).

———, classification (708—32, 49 ; —33, 24 ; —34, 32) (1311—49 (1854  
—20).

———, corals (512—1 ; —5, 27).

———, crustacea (1712—22).

———, echinoidea (513—1).

———, mollusca (368).

———, Tenasserim (1326—13, 34) (173—18, 152).

———, Thian Shan (1211—2, 75).\*

———, Tibet (793—11, 165 ; —12, 170).

———, Tipperah (423—1).

———, upper Indus basin (1109—38, 99, 111) (1324—27, 154).

———, upper Sutlej basin (1717—8, 306).

———, Western India (148—37, 93).

———, fish teeth from (423—11)\*.

———, Yünnan (1031, 368) (211—19, 230).\*

———, fauna (1167—1, 694 ; —2, 468).

---

\* See Introductory Note—Supplementary List



Tertiary, Yünnan, flora (1039).

———, outlier of —, near Simla (793—45, 9).\*

———, rivers, Northern India (1369—14)\* (1406—24).\*

———, *see also* Eocene, Miocene, Siwalik, etc.

*Tetraconodon magnum* Falc., from Siwaliks, Punjab (1109—8).

Thal, Kurram valley, geology (1975—23, 110).

Thal-Chotiali, Baluchistan, geology (1324—37).

———, topography (1756—1 ; —2).

Tha-ton district, Burma, tungsten and tin ores of (211a, 104).\*

*Thaumastotherium osborni*, Forster-Cooper, described (606—3).

Thayetmyo district, Burma, geology (1458) (1369—11, 169).

———, nummulitic limestone in (372—8).

Thenardite, from Didwana, Rajputana (1854—9).

Theobald, W., obituary notice (859—71, 11).

Theriodonts, in Permian of India (1353—5).

Thermal waters, *see* Hot springs.

Thian-Shan range, carboniferous in (1066—2).\*

———, fossil fish from (1061a).\*

———, plants from (1590a).\*

———, geology (1712—28 ; —31) (715—2).\*

———, petrography (666a).\*

———, physiography (436—2, 72) (1211—2 ; —3).\*

———, topography (678—2).

'Thibaw series', Shan States, *see* Hsipaw.

Thorianite, Ceylon, characters and composition (356—11) (820) (357—1) (515)  
(1457) (371) (927) (1002).

———, discovery and mode of occurrence (356—10) (358—3).

Thorianite, Ceylon, radioactivity of constituents (223).

———, variety of —, from Galle, Ceylon (516).

Thorite, Ceylon, atomic weight of lead from (1673).

———, composition (357—1) (358—3).

Thorium minerals, distribution of —, in Ceylon (35—89).\*

———, mode of occurrence and uses (514—10 ; —11) (555—14)

Thrust plane, Himalayan: inclination of (1025—7) (1219—34).\*

———, *see also* Overthrust.

'Thurr', *see* Desert, Sind.

Tibet, Devonian ? fossils from (477).

———, eruptive rocks from (58) (59, 6).

———, exploration of (1807—2) (1074) (1464—2) (1537—2) (465—1).

———, geography (749, Vol. II, 566) (395) (728—2) (633).

———, ancient (1273).

———, from Chinese sources (995—3 ; —6) (422—1) (1506).

———, and geology (240).

———, glossary of geographical terms (1578—7).

———, gold from —, analysis (962).

———, history of exploration in (857—10).

———, hydrography (1578—14).

———, jadeite from (333) (88—3 ; —6).

———, Marco Polo's travels in (995—5).

———, orography (1561—1) (1347).

———, pea staurolite from (1698—5).

———, physiography (806—8, Vol. IV ; —9 ; —10 ; —12).

———, trade and resources of (134—6).

---

\* *See* Introductory Note—Supplementary List.

Tibet, (Central), cretaceous *Omphalia* from (570—17).

—————, fauna (499—3).\*

—————, exploration (1816, 197) (1243—4; —10; —11) (1173—7; —9) (819) (476—9) (422—4) (1986—7).

—————, geology (793—11; —12).

—————, Orbitoides beds in (1854—26, 186).

—————, productions of (1559—1, 90).

—————, Spiti shales in (1311—46).

————— (Eastern), exploration (1871—8; —10) (1925) (61—1) (329a).\*

—————, geography (267—9) (476—1; —2; —7) (782) (521).

—————, physiography (806—8, Vol. III).

—————, river system (1987—7, 165) (1871—16; —17; —18).

—————, (Northern), exploration (806—7).

—————, (Western), altitudes in (1574—2, Vol. II, 420).

—————, cretaceous beds in (1366a).\*

—————, exploration (1243—5) (445—2) (1464—1) (1622) (1989—1; —2).

—————, geology (1572—3, 129) (148—62) (1066).

—————, physiography (1717—9, 62) (1716—3) (1576—6, 271; —9) (1578—12, Vol. III).

—————, water-parting in (1615—3).

Tibetan zone, in Himalaya (240, 230).

Tides, earthquake disturbances of —, on coasts of India (1509) (1871—11).

—————, in Gulf of Cambay (944—2) (552—2) (1679—9).

Tiger, fossil, from Siwalik hills (562—4).

Tilasite, from Kajlidongri (1659, 86) (793—24, 60).

Tilla, Mt., Punjab, geology (1975—10).

Tin, Banka I., supposed adulteration of (1436—9).

Tin, *in statu nascenti*, Malay Peninsula (957—1).

Tin deposits, Burma, distribution (211a).\*

—————, Malay Peninsula (1840) (1388) (1952—1).

—————, prospecting for (1222a).\*

—————, Perak (1757—1) (1970—4) (1533).

—————, geology of (1603—4 ; —11 ; —36) (1552—2).

—————, origin of (1603—16) (957—4 ; —5).\*

—————, prospecting for (1603—26).

—————, S.-W. Siam (1670, 525).

—————, Tavoy, Burma (211—22).\*

Tin mining, Malay Peninsula (501—4) (1970—5) (543) (957—6).\*

—————, Straits Settlements (1563).

Tin ore, Federated Malay States (514—20).

—————, *see also* Cassiterite.

Tinguaite, Rajputana, petrology (1034—28, 92).

Tinnevely district, geology (261) (596—24).

—————, topography (188—1) (1722).

Tipam sandstones, Assam (1159—9, 296) (1134—2, 191) (793—18, 200) (1369—12, 256 ; —13, 281).

Tipperah (Hill), geology (423—1).

Tirah, N.-W. Frontier, geology (793—4).

—————, topography (857—6).

Tirhowan sandstone, L. Vindhyan (1197—2, 6, 13).

Tirpul beds, tertiary, Herat (708—12 ; 48 ; —13, 264).

Tirumangalam stage, Madura (596—24, 11).

Tirupati (Tripetty) beds, U. Gondwana (987—14, 57 ; —18, 224).

Tista R., changes in course of (1181, Vol. III, 358) (576—2, 341).

---

\* *See* Introductory Note—Supplementary List.

Tista R., survey of (1034—36, 166).

—— valley, Siwalik beds in (1598—1) (1323—5).

Toba plateau, Afghanistan, physical features (276).

Tochi valley, N.-W. Frontier, cretaceous cephalopoda from (388—4 ; —5).

———, geology (1657—1).

———, igneous rocks from (793—1).

'Tonbo beds', Burma (424—3, 99, 116)=Plateau Limestone.

Tonglo hill, Sikkim, excursion to (867—2).

Tons R., Rewah, waterfalls on (35—75 to 77).

Tons series, U. Vindhyan (1854—17, 258).

Tooth, of elephant, from Nahan (65—1).

Topaz, crystalline form of (473) (1022).

———, from Katha district, Burma (708—32, 3).

Topaz-bearing rocks, Fed. Malay States (1603—34) (957—5).\*

Torbernite, Pichhli, Gaya district (1787—13, 257).\*

Tortoise, fossil, from U. Siwaliks, Punjab (1763—20).

Tortoises, land, of Siwaliks (1109—81).

Tourmaline, Ceylon, composition and crystallography (1834—2) (1968) (356—17, 60) (1336).

Tourmaline-corundum rock, Perak, petrology and origin (1603—20).

Tourmaline (Schorl)-rock, S. India, petrology and analysis (960—3, 61).

Trachyte, Aden, petrology (1304, 555) (1835, 13) (1520, 37) (1142—9, 148) (1164, 179).

———, Bassein, Burma (1763—16, 330).

———, Pahang Volcanic series, petrology (1933a, 453).\*

———, Tochi valley, petrology (793—1, 68).

Tracks, crustacean, in Pab sandstones (1854—29, 247).

---

\* See Introductory Note—Supplementary List.

Tracks, crustacean (?), in Haimantas, Spiti (1854—29, 250).

Trans-Himalaya, orography (806—1, 386) (1347).

Trans-Indus Salt Range, *see* Salt Range, Trans Indus.

Transition system (1198, 28) (1324—41, 47).

—————, in Son Valley (1325, 4).

—————, *see also* Dharwar system.

Transportation, by rivers, laws of (1324—29; —34).

Trap, Gwalior (730—1, 37).

———, Sutlej valley, petrology (1142—17, 67, 72, 79).

———, basic, Naini Tal, petrology (1219—12, 225).

———, *see also* Deccan Trap, Rajmahal Trap, etc.

Trappean grits, Kathiawar (569—6, 90)=Infratrappean grits.

Trappoid beds, L. Vindhyan (1159—3, 36).

—————, petrology (1325, 93).

Trap-shotten gneiss, Salem (988, 271) (859—31, 198).

Traumatocrinus limestone, U. Trias, fauna (133—1) (1236—3) (486—37).

Travancore, backwaters of (505).

—————, building materials (297—5).\*

—————, cordierite, optically positive, from (297—3).\*

—————, geology (987—25) (596—25) (297—9).\*

—————, laterite in (297—8).\*

—————, limestone formations in (297—7).\*

—————magnetic qualities of granite in (207—3).

—————, monazite sands in (1787—12) (297—4).\*

—————, mud-banks, *see* Mud banks, Travancore.

—————, pseudo-crystals of graphite from (1787—15).\*

---

\* *See* Introductory Note—Supplementary List.

Travertine, Baluchistan (1854—1, 285).

———, Darjiling district (1159—8, 85).

———, composition (1405—12).

———, Kashmir (1109—38, 48).

———, Kurnool, fossiliferous (1294—30).

———, Rajmahal hills (1744).

———, Shan States (1034—27 ; —30 ; —45, 325).

———, Tibet, concretionary (1698—5).

Tredian hills, Salt Range, geology (1975—18, 257).

Tree-fern stem, cretaceous, Trichinopoly (570—19, 133).

Tremenheerite, composition (1405—24).

Trias, classification and correlation of marine sediments (1237).

———, development in Asia (1311—48 ; —54).

———, Afghanistan (793—4, 105, 113).

———, Afghan-Turkestan (708—13, 243).

———, Baluchistan (708—34, 30).

———, fauna (486—28) (1787—4).

———, occurrence of *Halorites* in (1854—11).

———, Bokhara, fauna (133—2, 705).

———, Burma (1763—16, 315) (1787—1 ; —3).

———, Central Himalaya (1717—8, 304) (708—20, 67 ; —23 ; —33, 26) (486—5 ; —6).

———, fauna (1724—1) (486—21 ; —23 ; —26 ; —27 ; —32 ; —37).

———, Hazara (1860, 336) (1975—24, 124) (1219—17, 25).

———, Himalaya (724) (486—39).

———, fauna (708—3) (133—1 ; —2) (1236—1 to 3) (486—4 ; —11 ; —30).

———, composition (486—35).

———, Kashgar (1712—28, 82).

- Trias, Kashmir (1839—2, 165) (1109—38, 122) (1219—26, 302 ; —28, 240).  
 ———, Zangskar basin (1712—9, 349) (1109—22, 44).  
 ———, fauna (121—1) (1839—2, Vol. XXXVI, 221) (620—5) (486—41).  
 ———, Malay Peninsula, (1295—2 ; —3, 130 ; —5).  
 ———, Oman, Arabia (148—36) (486—34).  
 ———, Pamir (1725, 458).  
 ———, Punjab (1859—3, 16) (1975—14, 72 ; —21, 358).  
 ———, Salt Range, *see* Ceratite beds.  
 ———, Rupshu (1712—5, 122) (793—9, 92).  
 ———, Spiti (1712—5, 30) (708—5) (793—6, 192 ; —9, 60).  
 ———, classification (1010—2 ; —3 ; —4).  
 ———, fauna (1712—5, 35) (708—31, 11) (486—29 ; —38) (1011).  
 ———, Tibet (793—11, 162 ; —12, 143).  
 ———, Yünnan (1167—1, 693 ; —2, 466) (1031, 349).  
 Triassic ammonites, development (486—24).  
 Trichinopoly district, cretaceous (1294—38, 218, 315) (147—8).  
 ——— fauna (1326—15) (596—19) (1682).  
 ———, fossil Saurian from (147—5).  
 ———, geology (147—8, 27) (988) (596—18).  
 ———, topography (1247).  
 Trichinopoly stage (147—8, 107).  
 Tridymite, in trachyte, Aden (1835, 27).  
 Trigonoarca beds, Pondicherry (1008—3, 58).  
 ———, geological horizon (1854—26, 195, 211).  
 Trilobites, discovery of ———, in Salt Range (987—42).  
 Trisul Mt., Kumaon, ascent of (1090—5) (1267, 115).  
 Trivandrum, Travancore, ground temperature at (259) (600 ,



Trivandrum, Travancore, temperature of wells and springs at (397—6).

Trivacary (Tiruvacarai), Pondicherry, fossil wood at (1891—2) (272—4 ; —11) (147—4).

*Trizygia speciosa* Boyle, note on genus (570—37).

Troilite, in meteorites (1159—2, 17).

Troktolite, Tochi valley (793—1, 65).

Tropites limestone, Byans (1010—2, 217).

—————, Byans, fauna (1236—1) (486—21 ; —23 ; —26).

Tsang province, Tibet, geology (793—11 ; —12).

Tsang-po R., Tibet, course of (1552).

—————, identity of —, with Brahmaputra (476—6) (97) (740—1) (1871—13) (1925) (422—2) (108—2) (1428).

—————, with Irrawaddy (995—1 ; —4) (1020) (359—2) (677—2 ; —3).

—————, falls on (1863—2) (581, 292) (61—5).

—————, gradient of (1428, 500).

—————, lower course of (1489—3, 238) (669—23) (1282—2, 499) (1871—10, 76 ; —17, 583).

—————, *see also* Brahmaputra and Dihong.

Tsang-po valley, exploration (1871—7) (1464—2, 159) (61—2 to 4).

Tscheffkinite, Ceylon, analysis (1809, 365).

—————, Salem, occurrence and composition (413—2) (829) (1159—53) (577—32, 202).

Tschertschen desert, Cent. Asia, sand dunes in (806—8, Vol. I, 311).

Tufa, calcareous, *see* Travertine.

Tuffs, volcanic, Bawdwin, Burma (1034—45, 58) (211—20, 141).\*

—————, Chamba (1142—16, 97).

—————, Malani series (1034—28, 89).

—————, Pahang series (1933a, 503).

---

\* *See* Introductory Note—Supplementary list.

- Tuffs, volcanic, Perim I., Gulf of Aden (1454—2, 207).  
 ———, Raipur, Central Provs. (173—8, 61).  
 ———, Wajra Karur, Anantapur (596—31, 109).  
 ———, *see also* Agglomerate slates and Volcanic ash beds.
- Tumkur district, geology (1548—4 ; —5) (1915—5 ; —9) (1549—3) (1606—2).  
 ———, 'Talpargi' springs in (555—3) (1606—3).  
 ———, ultrabasic dykes in (1915—3).
- Tungabhadra R., gold washings in (68—7).\*  
 ———, pot-holes in (1294—26).
- Tungsten (Wolfram), Batang Padang (1970—6) (973).  
 ———, Burma, distribution (709a—2)\* (211a)\* (211—24).\*  
 ———, literature of (1815a).\*  
 ———, mining (709a—1 ; —3)\* (1192a).\*
- Tungsten ores, genesis of (211—21 ; —23)\* (1459a)\* (275—3).\*  
 ———, occurrence and utilization (555—16).
- Turan Mal, Satpura range, description (1484—2) (791).
- Turgite, from Jagiapet, Kistna district (1159—20).
- Turkestan, geology (708—17) (897—1).  
 ———, graphite and turquoise in (1319—1).  
 ———, river-system (897—5).  
 ———, routes to —, from Punjab (608—1).  
 ———, topography (1807—3) (1441).  
 ———, *see also* Central Asia, Kashgar, Kuenlun range, etc.
- Turquoise, characters and composition (585) (1436—4) (1412).  
 ———, occurrence in Khorasan (1571) (1736—1).  
 ———, Turkestan (1319—1).

---

\* See Introductory Note—Supplementary List.

Tusham hill, Rajputana, petrology of rhyolites from (1142—14, 105 ; —28).

Tuticorin, artesian well at (35—8).

Tween, A., obituary notice (859—71, 10).

*Twingonia*, corrective note on (1369—9).

Twinnge, Burma, iron ore at (211—18).\*

## U

Udaipur State, Rajputana, *see* Mewar.

Ultrabasic rocks, Salem district, petrology (1219—18).

—————, Tumkur district, Mysore, alteration of (1915—3).

—————, *see also* Norite, Peridotite, etc.

Umaria coal-field, geology (888—26 to 28 ; —29, 154).

Umia Stage, Cutch (1198, 259) (1324—41, 223).

—————, fauna, *see* Jurassic, Cutch.

—————, flora, *see* Jurassic, Cutch.

—————, geological horizon (148—47, 80) (372—12, 32).\*

—————, *Plesiosaurus* from (1109—6 ; —16, 28).

—————, Kathiawar (596—6, 78).

Umlah Ghat, Mirzapur, section of Vindhians at (1345).

Unconformity, at base of Irrawaddy series (1723—5, 266 ; —6, 276).

—————, cretaceous-eocene, Sind (1854—19, 86 ; —23, 117).

—————, eocene-Pegu, Burma (1725—5 ; 262).

—————, Nahan-Siwalik (1197—7 ; —60 ; —65, 119) (1219—10, 182).

United Provinces, geology (1197—27).

—————, stone implements from (1490—4).

—————, sub-soil water in (1238—2)\* (899a).\*

---

\* *See* Introductory Note—Supplementary List.

- United Provinces, utilization of 'usar' lands in (1249—1).
- Unta.Dhura pass, Kumaon, journey to (86—2) (1912) (1717—15, 161).
- Uralian, Yünnan (211—13, 107).
- Uralitization, of diorite, Giridih (864, 125).
- , of pyroxene (859—17, 24).
- Uraninite (Thorianite), Ceylon (356—10).
- Uranium ochre, Pichhli, Gaya district (1787—13).\*
- Urmi series, Persian Gulf (1406—10, 22).
- Ursus sivalensis*, Falc., from Siwalik hills (562—5).
- Ursidæ, of India, remarks on (1406—17).
- 'Usar' lands, *see* 'Reh' lands.
- Utatur (Ootatoor) stage (147—8, 52).
- , geological horizon (1008—2).
- , *Ichthyosaurus* from (1109—16, 27).
- Uwarowite, from Rupshu (1808—1).

## V

- Vaikrita system (708—20, 41).
- Vaimpalli slates and limestone, Cuddapah (987—7, 159).
- Valleys, over-deepening of —, in Kumaon (713—2, 291).
- , *see* Hanging-and River-valleys.
- Valudayur stage (147—8, 151).
- , geological horizon (1008—3, 54) (1854—26, 194, 211).
- Veddæ, Ceylon, stone age of (1557—1 to 3).
- Vegetable impressions, fictitious, in sandstones (1666—9).
- , in agate (1696—3).

---

\* *See* Introductory Note—Supplementary List.

- Vegetation, influence of hot springs on (71—43, 561).
- Veins, rock, water in (275—4).\*
- Velates schmideliana* Chemn., occurrence in tertiary of India and Burma (1311—17).
- Vellore, neolithic implement from (331—1, 141).
- Vemavaram beds, U. Gondwana (596—17, 60).
- Venkatpur sandstone, Sullavai series (987—23, 230).
- Vertebraria*, affinities of (570—19, 199) (1988—2).
- , structure of (1324—53).
- Vertebræ, Dinosaurian, from Indian cretaceous (1109—76).
- Vertebrata, fossil, distribution in India (1215—2) (1109—39 ; —75).
- , of India, history (1109—24).
- , Gaj series, Baluchistan and Punjab (1406—14).
- , Gondwana (1109—29 ; —34).
- , Kota-Maleri series (534) (1109—9, 36 ; —57).
- , Panchet series (902—2).
- , permo-carboniferous, Kashmir (1611, 10).
- , pleistocene and pre historic, coll. Indian Museum (1109—73).
- , pre-tertiary, of India (1109—16).
- , *see also* Fossil Bones, Mammalia, etc.
- Vertebrate fauna, distribution of —, in India, Ceylon and Burma (148—91).
- Vihi district, Kashmir, geology (1219—26, 297).
- , relations of Zewan beds in (1324—65).
- Vindhyan limestone, analysis (1159—36, 111).
- , bituminous, from Jodhpur (577—18).
- , spiral impression in (96a—1).\*
- , supposed organic remains in (764—7, 43).

---

\* See Introductory Note—Supplementary List.

- Vindhyan range, period of elevation (1158—12, 370).
- , sandstone, Bundelkhand, ferruginous spherules in (1405—27).
- , pseudo-fucoids in (1854—29, 248).
- Vindhyan system (1326—12, 251 ; —23, 304) (1159—3).
- , revised classification (1854—17).
- , Bundelkhand (1197—2) (1854—18, 267).
- , Central India (1197—37, 57).
- , Central Provs. (1326—69, 70).
- , Chhatisgarh basin (987—32, 172).
- , Mahanadi basin (71—28, 173).
- , Nerbada valley (1199—3, 141) (148—22, 205) (173—5, 15).
- , Pranhita-Godavari basin (987—23, 227).
- , Rajputana (1197—13) (730—5, 287) (1034—28, 26).
- , Sarguja (71—63, 121).
- , Son valley (424—1 ; —2) (1324—49) (1325).
- , United Provs. (1197—27, 15).
- , Western India (148—37, 85).
- , occurrence of gypsum in (577—8).
- , relations of —, to Aravalli range (1324—46, 170).
- Virgal beds, Salt Range (1859—26, 185, 241).
- Vizagapatam district, geology (110—4) (987—33).
- , topography (285).
- Vizagapatam Hill Tracts (Jeypore), geology (1872—2).
- , nepheline syenites from (1872—4).
- , petrology of rocks from (1873).
- , topography (1843).
- Vizianagram, artesian well at (897—38, 143).

Vizianagram gneiss (897—33, 150).

Volcanic ash beds, Aden hinterland (1077, 316).

—————, Chamba, petrology (1142—16, 98).

—————, in Deccan trap (148—16, 142).

—————, Ladakh, petrology (1142—18, 118 ; —37, 325).

—————, Pavagad hill, Panch Mahals (577—12, 157) (96a—2, 92).\*

—————, Wuntho, Burma (1311—18, 116).

Volcanic beds, Andaman Is. (1324—14, 138).

—————, Jaunsar (1324—5, 194).

' Volcanic coal ', from Arakan (1405—25).

Volcanic eruptions, Barren I., in 18th Century (1159—54).

—————, explosive, Chindwin valley, Burma (1324—68).

—————, pleistocene, N. Shan States (1034—34).

—————, *see also* Mud Volcanoes.

Volcanic foci, in Konkan (320—3).

Volcanic islands, on Arakan coast (1535) (1934—1) (165—4) (580).

—————, off coast of Coromandal (1405—26).

Volcanic phenomena, in India (1117—9, 75).

—————, supposed, in Kashmir, *see* Suyam.

Volcanic rocks, Aden, petrology (1854—38, 324).

—————, Afghanistan, petrology (859—21, 127).

—————, Baluchistan (1854—1, 195, 288).

—————, Burma (1369—11, 45).

—————, Kashgar (1712—28, 83).

—————, Kuenlun range (1066, 175).

—————, Kumaon, petrology (1219—11, 30).

---

\*. *See* Introductory Note—Supplementary List.

Volcanic rocks, Son valley, petrology (1325, 70, 93).

—————, *see also* Eruptive and Igneous rocks, etc.

Volcanic series, Afghanistan (793—22, 28).

—————, Baluchistan (1854—36, 196).

—————, Dalhousie (1142—4, 34, 38).

—————, Garhwal (1219—5 ; —6).

—————, Himalaya (1324—22, 156 ; —26, 132, 135).

—————, Kashmir (1839—2, 93, 108) (1109—7, 159 ; —38, 217) (1219—28, 232).

—————, Oman, Arabia (1406—10, 11).

—————, Upper Indus valley (1324—27, 154).

—————, Yünnan (211—10, 188).

Volcanic stage, Bawdwin, Burma (1034—45, 55).

—————, Hazara (1219—17, 25).

Volcano, extinct, Aden (1159—4, 259).

—————, Haw-shuen-shan (She-too-shan), Yünnan (29—2, 90 ; —3, 186) (211—10, 189).

—————, Popa (Puppadaung), Burma (148—8).

—————, supposed, in Guntur district (834—2, 227).

—————, in Himalaya (194—1) (35—48).

—————, in Seoni district (197—1).

Volcanoes, Bay of Bengal (228—13) (71—41 ; —66 ; —70).

—————, bibliography (1159—55).

—————, submarine form of (1159—48).

—————, *see also* Barren I. and Narcondam.

—————, Central Asia (892—3, 332 ; —4, 337).

—————, of India (228—10) (71—71).

—————, S.-E. Persia (103—1, 278) (1142—35) (1143, 292) (1854—1, 270).



Volcanoes, *see also* Mud volcanoes.

Vredenburgite, characters and composition (577—28, 200 ; —32, 42).

Vulcanicity, causes of (577—48, 66).

## W

Wad, characters and composition (577—32, 116).

Wadhwan sandstone, Kathiawar (569—8, 84).

Wagur, E. Cutch, memoir on (493—2).

Wajra Karur, Anantapur, intrusive 'neck' at (596—31, 109 ; —36) (1025—3).

Waltair sands, Vizagapatam (987—33, 147)

Wangtu, Sutlej valley, oligoclase granite at (1159—27).

Warangal district, Hyderabad, geology (1868—4 ; —5) (987—8).

Wardha valley coal-field, geology (888—20).

Wardwan valley, Kashmir, geology (1109—13, 49).

Warkalli beds, Travancore (1294—17) (987—25, 92 ; —26) (596—25, 25) (298, 8, 45) (1183, 8).

Warthite, *see* Blödite.

Water, analysis of —, Ataran, Amherst district (1405—3).

—————, Bombay Presidency (662).

—————, Fort William, Calcutta (895—2).

—————, in India (1147) (1301—2).

—————, Marikanave, Mysore (1652—5).

—————, boring for —, at Red Hills, Madras (929).

—————, *see also* Artesian wells and Calcutta boring.

—————, deposit from —, Raniganj, analysis (1326—68).

—————, in igneous rocks (859—26 ; —37, 34) (1142—38) (275—4).\*

---

\* *See* Introductory Note—Supplementary List.

Water, purification of —, by magnetic oxide of iron (1193—4).

———, saline, from Muttra, analysis (1043—4).

———, sub-soil, distribution in N. India (1572—2, 288).

———, in United Provs. (1238—2)\* (899a).\*

Waterfall, Brahmini R., Bonai State (1564—2).

———, Cauvery R., (1829—1, Vol. I, 448) (943) (188—3, 724).

———, Gairsapa, Shiravati R. (35—33; —34) (313—1, 293) (1944) (1294—42, 416).

———, Gokak, Ghatparbha R. (130—1, 70) (1294—41, 277) (596—12, 87).

———, Hasdo (Hestho) R., Rewah (888—20, 144).

———, Kawa Doong, Lushai hills (1743, 45).

———, Sahasradhara (Sansadarra), Sambalpur (1707—1).

———, Simareca, Tons R., Rewah (1852) (35—75 to 77).

———, Tsang-po R. (1863—2) (581, 292) (61—5).

Waterfalls, on N. side of Vindhyan scarp, Bundelkhand (616—3, 192).

Water-holes, in gneiss, Ceylon (1705—2).

Water-parting, Himalayan, position of (849—7, 479) (1324—43; —70).

———, recession of (486—7).

———, Pamir (1986—4, 294).

———, Tibetan Plateau (1615—3).

Water power, in India (484a).\*

Water-shed, *see* Water-parting.

Water-supply, Aden (1929) (1159—4, 263).

———, Bombay (352) (1812—1; —2).

———, Calcutta (913—2).

———, *see also* Calcutta boring.

———, Chikballapur, Mysore (1915—15).

Water-supply, Chitaldrug district (1606—1).

—————, Deccan trap plateau (1833).

—————, Gujarat (1679—12) (1507—3).

—————, in India (440) (109).

—————, Mysore (1652—20, 23).

—————, *see also* 'Talpargi' springs.

—————, effect of forest destruction on (1173—1) (124).

—————, subterranean, in Baluchistan and W. Sind (79—1).

—————, in Bihar (913—1).

—————, of Rangoon (1324—39).

—————, Surat district (148—44).

—————, *see also* Artesian Wells, Springs and Wells.

Wattegama, Ceylon, granular dolomite from (1569).

Wavellite, from Singhbhum district (577—19).

Waves, tidal, caused by earthquakes (1509) (1871—11).

———, translation of —, down a river (1316—1) (1426—8).

Waziristan, geology (1326—24) (1702).

———, physical features (1985) (857—9, 52).

Weathering, lateritic, of Deccan trap (1892—28).

—————, of hornblende schist, Coorg (1294—48, 320).

—————, spheroidal, of igneous rocks (297—2, 8).

—————, *see also* Rock-weathering.

Weean beds, Kashmir (1839—2, 160, 168).

———, fauna (1839—2, Vol. XXXVI, 217).

———, geological horizon (1219—26, 308).

Weinbergite, in Kodaikanal meteorite (115—2, 181).

Wellawaya, Ceylon, nitre cave at (438—8, 429) (416—1).

- Well, burning, Chittagong (1957) (1034—36, 177) (906) (867—6, Vol. II, 352).
- , Jawala Mukhi, Kangra (1246, Vol. I, 69) (881—1, 187; —3, Vol. I, 85) (647—2, 130).
- , Muktinath, Nepal (1243—12, 356).
- Well section, Chandpur, Punjab (439—1).
- , Cochin (228—12).
- Well-waters, Gujarat, analyses (1043—1).
- , saline, from Muttra (1043—4).
- Wells, Bikanir (1197—61, 230).
- , Bombay (228—11, 209).
- , in Gangetic alluvium (1249—2).
- , Hassan district, Mysore, water level in (1549—8).
- , Hazaribagh, in gneiss (1197—18).
- , irrigation from —, in United Provs. (323) (1197—67).
- , method of sinking —, in Bharatpur (803, Vol. I, 601).
- , in Bihar (222—18) (913—1).
- , in Punjab (1640—2) (1715—3).
- , temperature of —, in Afghanistan (1091—2, 531).
- , in India (1294—39).
- , Nahan, Sirmur (1539).
- , Punjab (557—11; —12; —15) (1572—5, 288).
- , Rajputana (235—10, 112).
- , Trivandrum (397—6).
- , uniform temperature of —, in Bengal (914).
- , *see also* Artesian wells.
- Wer (Weir) stage, Alwar series (730—2, 87) (830—5, 192).\*
- Werfen beds, in Salt Range (1858).

---

\* *See* Introductory Note—Supplementary List.

Werneritization, in diorite, Giridih (864, 123).

Western Bengal, fossil flora of coal-fields (570—53).

Western China, *see* Yünnan.

Western Duars, geology (1159—6).

Western Ghats, geological sections (1341—3) (1294—49, 381).

—————, physical features (1173—1).

Western India, *see* India, Western.

Westing, of river channels (677—6, 283).

Wetchok-Yedwet area, Burma (1369—7).

Wetwin shales, Devonian, Burma (424—3, 118) (1034—45, 241).

—————, fauna (1470—2, 157).

White trap, Bombay (1294—47, 230) (1975—1, 193).

—————, Chhindwara, petrology (612—2).

*Williamsonia*, distribution in India (570—31).

Winchite, characters and composition (577—14, 79 ; —32, 149).

Wind, action of —, in Seistan (1140—3, 223).

————, erosion by —, *see* Deflation.

Wodiagarh, Ganjam, description (1192).

Wolfram, *see* Tungsten.

Wolfram-bearing quartz lodes, Tavoy, origin (211—21).\*

Wollastonite, in siliceous limestone, Ceylon (986—2, 21).

————, in gneiss, S. Mirzapur (1159—5, Vol. VI, 42).

Wollastonite-scapolite gneiss, Ceylon (356—1, 602½; —3).

'Wootz', composition (1377) (1708) (1709) (821) (1455—1).

————, history of (916).

————, physical properties (1277) (1436—11).

---

\* *See* Introductory Note—Supplementary List.

Wuntho State, Burma, geology (1311—18).

Wynaad, Malabar, geology (987—13) (793—5) (794).

## X

Xenotime, mineral related to —, from Manbhum (1787—16).\*

## Y

Yamethin district, Burma, tungsten ores in (211a, 102).\*

Yanaon, French India, section of alluvium at (1067—1, 156).

Yarkand, geology (1712—26 ; —30) (1480—5).

———, topography (1615—1) (815) (1807—1 ; —3) (608—2 ; —3).

Yarkand river, exploration (445—1 ; —2, 204).

———, sources of (795—1) (451—5, 94).

Yasin valley, geology (793—34, 294).

———, physical features (904).

———, topography (795—2).

Yaw stage, Burma (1406a).\*

Yaw valley, Burma, Hippopotamus jaw from (237—4).

Yawnghe, S. Shan States, lacustrine deposits (32—3, 215).\*

Yelagari hills, Salem, description (116).

Yellambail, Hyderabad, supposed eozoneal limestone from (986—1) (987—8, 47).

Yenangyat, Burma, tertiary gastropoda from (32—3, 224).\*

Yenangyat-Singu oil-field, asymmetrical structure (1369—2).

———, geology (1311—27, 170) (712) (372—5) (1369—11, 101).

Yenangyaung oil-field, geology (1326—17, 312) (1311—1 ; —27, 95) (712, 58) (1369—11, 55).

———, miocene fossils from (1406—2) (1369—4 ; —5).

---

\* See Introductory Note—Supplementary List.

- Yenangyaung oil-field, occurrence of *Batissa* in (1369—6).
- Yenangyaung stage (1311—22, 70 ; —36, 12 ; —37, 8) (712, 40).
- , age and correlation (1855).
- Yttrotantalite, Ceylon, analysis (1809, 721).
- Yünnan, Cambrian in (468—6 ; —7\* ; —8\*).
- , Cystidea from (85a)\* (1470—12).\*
- , fossil mammalia from (1006—1a).\*
- , paludiniidæ from (1167—4).\*
- , plants from (1988—3 ; —5) (1039).
- , Fusulina limestone in (468—5).
- , geology (1739, Vol. I, 305) (1031) (376) (468—1 ; —2 ; —4) (469) (211—10 ; —13 ; —19\*).
- , minerals from (1581).
- , mines and mineral resources (1031, 385) (211—25).\*
- , native copper from (685).
- , Ordovician and Silurian fauna (212) (1470—11).\*
- , orography (1050).
- , palæozoic and mesozoic fossils from (1083—3) (499—1) (1167—1 ; —2 ; —5\*).
- , petrology of rocks from (1092) (1004) (243—2).
- , physiography (344, 718) (1537—1) (1883—2 ; —4).\*
- , river system (918).
- , routes to (1688).
- , seismic activity in (468—3).
- , stone implements from (211—2 ; —8 ; —15).
- , topography (728—1) (359—1 ; —3) (1648—1 ; —2) (29—2 ; —3) (517) (660) (1012) (1083—2) (1523—2 ; —3) (407—1 ; —2) (711) (1513) (1883).

---

\* See Introductory Note—Supplementary List.

Yunzalin valley, Burma, description (1362—2).

Yusufzai, N.-W. Frontier, stone circle in (1397—3).

## Z

'*Zamia* beds,' Cutch (148—15, 18, 27)=*Umia* stage.

Zangskar, Kashmir, geology (1712—9, 343) (1109—22, 44) (1034—14, 67).

———, nummulitic limestone in (1777—3, 381) (1034—10).

———, serpentine from —, petrology (1142—37, 316).

Zangskar range, crystalline rocks of (1109—13, 55 ; —38, 294).

Zangskar system (1109—38, 122).

Zayul Chu, course of (1282—1 ; —2) (61—1, 330).

Zebingyi stage, Burma (1034—26, 83 ; —45, 163).

———, fauna (1470—1, 90 ; —10, 89, 95).

Zeolites, from Deccan trap (1775—2, 294) (1675—2).

———, analyses (1775—1) (786—6 ; —8).

*Zengophyllites*, note on genus (570—19, 200).

Zewan beds, Kashmir (669—6 ; —9) (1839—2, 128) (1219—26, 289, 298 ; —28, 237).

———, fauna (431—4) (479—2) (436—42).

———, flora (1611) (1610—2 ; —3).

———, geological horizon (1324—65) (793—14).

———, occurrence of *Gangamopteris* in (1311—45).

Zhob valley, Baluchistan, exploration (857—3).

Zircon, Ceylon, characters and composition (1334—1) (310) (330—1 ; —2) (317—3) (356—17, 61).

———, irregularly developed crystals of (1681).

———, Vizagapatam, composition (936—6 ; —7).

Zirconia, Ceylon, spectra of (1677—3).

Zirconium, new element accompanying, *see* Jargonium.



Zirkelite, varieties of —, from Ceylon (142—2).

Zoisite, from Zangskar (1034—14, 67).

Zoji La, Kashmir, recession of water-parting in (1324—66, 150, 154) (1321—1, 42).

Zonal distribution, of cretaceous-cocene fauna, Baluchistan (1311—41) (1854—26, 173).

—————, of cretaceous *Orbitoides*, India (1854—26, 197).

—————, of Indian Nummulites (1854—19, 85).

—————, of miocene fauna, Burma (1311—36, 42) (1723—6, 280).

—————, of *Placentiaceras tamulicum*, Kosmat (423—10).\*

—————, of Siwalik fauna (1406—16, 278).

—————, of tertiary echinoidea, in Sind (1854—20, 186).

Zonal imbrication, in Hazara (1219—17, 86).

—————, in Kashmir (1219—29, 136).

Zones, fossiliferous, Yenangyaung oil-field (1369—5, 137).

---

\* See Introductory Note—Supplementary List.